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FOREWORD

FOR MANY YEARS evidence has been available showing the tremendous disparity in the ability of the states to support public education. In view of this situation the National Education Association has urged that the federal government should participate in the financing of public education.

The Association has taken numerous steps looking toward bringing about such participation by the federal government. In 1926 it published Norton's pioneer scientific investigation of the relative ability of the states to support education.

The platform of the Association declares that "funds should be provided by the federal government to assist the states in making an adequate education available to every child and adult." At its Denver convention in 1935 the Representative Assembly approved this resolution: "The National Education Association reaffirms its stand that adequate federal aid should be made available to the states to the end that every child and unemployed youth should be enabled to enjoy his right to formal education, and to the end that adult education may be financed, provided always that the expenditure of such funds and the shaping of educational policies shall be matters of state and local control."

The present investigation, utilizing the most recent studies of the relative ability of the states, presents evidence as to the relative efforts of the states to support education and shows what the results of their effort have been in terms of financial provisions for state educational programs. This bulletin effectively refutes the charge that the states where public education is inadequately financed are not exerting as much effort as other states. It shows that there are many more poor states than rich states exerting great effort to support education. It shows that almost the entire financial resources of some of the poor states would be required to provide a reasonable educational program, leaving nothing for the support of other governmental functions.

This study, therefore, presents new evidence of the need for federal participation in the financing of education. It is the first comprehensive study of the relationship of the three factors, "effort," "adequacy," and "ability," as related to the financing of state school systems. It should be of service to students of school finance and of value to all those interested in having the federal government help to insure a reasonable educational opportunity to every child.

This bulletin was prepared by Lyle W. Ashby, assistant director of the Division of Publications, with the assistance of members of the staff of the Division of Research.

WILLARD E. GIVENS, *Executive Secretary,*
National Education Association.

CHAPTER I

The Problem

The question of what part the federal government should take in the financing of public education has received increasing attention in recent years. During the depression years the inability of many states and communities to support their schools adequately has been emphasized more strongly than ever. The present study provides significant new data which will contribute to a solution of the problem of the relation of the federal government to education.

It is contended by some that there is no need for the participation of the federal government in the financing of education; that each state is able if it is sufficiently interested, to support its own educational program. It has been proved, however, that the ability of the states to support education varies widely. Norton's pioneer investigation showed that in 1922 the state with the greatest ability to support its educational program was six times as able to do so as the state with least ability. Chism's study of the relative tax resources of the states, published in 1936, reaffirms Norton's findings. Newcomer's study, published in 1935, shows an even greater disparity. Any assertion that the states are *equally* able to meet their educational responsibilities is disproved by these studies.

Nevertheless, the argument still persists that the states which do not provide adequate financial support for their schools are failing to exert sufficient effort to support them or that they are making less effort than the states where more adequate financing is provided the schools. Thus, according to an editorial in the *New York Sun*:

Anybody can figure out for himself that the New England states have been willing to spend proportionately more of their aggregate wealth for education than the South Atlantic states have been willing to spend. . . .

There might be some justification for federal financial support of schools if it could be shown that the people in those regions have already done their utmost for their own schools. But if their public authorities have preferred to spend relatively little for public education, whose fault is that? . . .

Many states have made heroic sacrifices in the upbuilding of their public schools; these would be the first to be called upon for additional money to

make up the arrearages in other states which, for whatever reason, have sacrificed proportionately less. If children in some states are condemned to illiteracy, who condemns them? ¹

Satisfactory evidence has not been available for either reaffirming or denying the above point of view. Further research has been needed to provide a more scientific determination of the relative efforts the states have put forth in support of education, of the relative adequacy of financial support they have been able to provide their schools with the efforts put forth, and whether all states can support their schools with a reasonable degree of effort.

Do the states which exert greatest effort to support education receive in return the most adequate financial support for the schools their children attend? Or do the states which exert least effort to support education nevertheless receive in return for their small effort the most adequate financial support for the schools their children attend? Or is there no relationship between effort to support education and the adequacy of the support provided? Any one of these three types of relationship is a possible answer.

Do the states of most ability to support education exert the greatest effort to do so? Or do the states of least ability to support education exert the greatest effort? Or is there no relationship between effort and ability? Any one of these three types of relationship is also possible.

Scientific information on these and related questions should be of value in connection with the problem of the proper relationship of the federal government to the financing of education.

The present study is also valuable in other ways. It provides information useful to educational leaders and citizens who are interested in knowing (1) whether their state has exerted more or less effort to support schools relative to the efforts of the other states; (2) whether the effort their state put forth provided more or less adequate financial support for schools than is provided in other states; and (3) without regard to what other states did, whether their state tended between 1920 and 1932 to

¹ Cited in an editorial in the *Elementary School Journal* 34: 241-45. December, 1933.

improve or decline on "effort" put forth and "adequacy" of support provided.

The present investigation also presents data of use to those who are interested in the adoption of better plans of state and local taxation. It will show what states are exerting most effort to support education in terms of a uniform tax plan. States with poor systems of taxation find it more difficult to raise revenue than those with more efficient systems. If the poor states, for example, which put forth least effort in terms of a model tax plan have undesirable tax systems, this fact will be evidence of the need for improving their tax plans. The results will be of similar value in the case of wealthy states which exert but little effort in terms of a model tax plan and provide only inadequate support for their schools.

The principal sources of data for this study are: (1) Chism's study² of the relative tax resources of the states; (2) Newcomer's estimate³ of the relative tax resources of the states; (3) Mort's study⁴ of the measurement of the educational needs of the states; and (4) the *Biennial Surveys of the United States Office of Education*, principally the section on the "Statistics of State School Systems."

The data of the present study as to the adequacy of financial support accorded the schools are superior to those previously used in comparing the states in that a more scientific measure of educational load than was hitherto available is utilized. This is Mort's index for

the measurement of educational need cited above.

The technics utilized in the present study are primarily statistical, analytical, and interpretive. These technics will be described when used.

This study deals only with the problems mentioned as they pertain to expenditures for the current costs of public elementary and secondary education. The word "education" will be defined as pertaining only to these branches of the educational system. Each alternate year from 1919-20 thru the year 1931-32 is covered.

The specific purposes of this study may be summarized as follows: (1) to measure the relative "efforts" of the states to finance public education; (2) to measure the relative "adequacy" of the financial support provided public education in the several states; (3) to discover the relationship existing between the three factors, "effort," "adequacy," and "ability"; and (4) to discover the "efforts" that would be required of the states to support a reasonable uniform program of financial support for public education. In general, these are the major steps into which the problem was broken up to facilitate the investigation. Chapter II reviews previous research. In Chapter III the formulas and the data for the measurement of "effort" and "adequacy" are presented. Chapters IV, V, VI, and VII deal with the four problems listed above in the order mentioned.

² Chism, Leslie L. *The Economic Ability of the States: The Ability of the Various States to Raise Tax Revenue Under a Plan of Taxation Based on the Model Plan of State and Local Taxation, with Special Reference to the Relative Ability of the States to Support Education*. Teachers College, Columbia University, Contributions to Education No. 669. New York: Bureau of Publications, Teachers College, Columbia University, 1935. 169 p.

³ Newcomer, Mabel. *An Index of the Taxpaying Ability of State and Local Governments*. New York: Bureau of Publications, Teachers College, Columbia University, 1935. 85 p. This monograph gives data for 1930 only. A revision of this monograph including data for 1920 as well as 1930 is included in: Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936. p. 115-78 and 283-308.

⁴ Mort, Paul R. "An Objective Basis for the Distribution of Federal Support to Public Education." *Teachers College Record* 36: 91-110; November, 1934.

CHAPTER II

Review of Previous Research

The present study is the first one devoted primarily to a consideration of the efforts of the states to support education as related to the adequacy of the financial support accorded public education in the several states. Considerable work has been done on the isolated problems of "effort" and "adequacy" in local areas, however, and a few such studies have been made of states.

The implications for this study of previous research on these problems in local and state areas will now be considered. This review as presented does not include all studies bearing on the problem. It is intended, however, to include the more important studies and to omit none which would make an added contribution to the discussion.

Measurement of the Efforts of Local Communities To Support Education

Effort has long been recognized as a factor in the apportionment of state school funds. As early as 1874 Massachusetts passed legislation denying aid to the wealthiest districts.¹

Cubberley recognized the effort factor as essential in any method of apportioning state school funds. His theory was that the effort of a community could be measured thru the tax rate on property.² This fundamental concept is still in use in presentday state educational equalization programs.

A number of the early state school surveys discussed the problem of measuring the efforts of communities to support education.³ They followed the same general pattern Cubberley had suggested earlier.

Perhaps Updegraff laid more stress on the effort factor than any other writer in order to support his payment-for-effort theory. He

held that the effort of a community to support education could be measured "by its tax rate based upon the valuation of its taxable property for school purposes, at 100 percent of its value or at its true value."⁴

Strayer and Haig in 1923 suggested taxable income plus one-tenth the full value of real estate as a measure of economic ability instead of taxable property alone.⁵ Theoretically, the calculation of effort, upon the basis of such a measure of ability, would have been a step beyond the Cubberley approach. However, in the series of other studies under the auspices of the educational finance inquiry, which Strayer directed, a uniform tax rate on the full value of property was utilized as a measure of effort.⁶

Mort, in his studies on state school finance, has used the value of taxable property as a measure of the ability of a community to support education. Equalization of burden obviously requires a measure of effort. According to Mort, "no substitute has as yet been developed for the assessment of property as a measure of ability to pay."⁷

If one accepts this, one must also accept the statement that there is no better measure of the efforts of local communities within a given state to support public education than the tax rate on equalized assessments of property. However, this is not a true measure of effort from the point of view of the community's total economic ability. It measures effort only in terms of a faulty tax system and fails to take into consideration certain other factors which should be included in a theoretically correct formula.

Mort's defense of this measure for local communities is as follows: ". . . the district is

¹ Mort, Paul R. *State Support for Public Schools*. New York: Bureau of Publications, Teachers College, Columbia University, 1926. p. 4.

² Cubberley, Ellwood P. *School Funds and Their Apportionment*. New York: Teachers College, Columbia University, 1905. p. 213.

³ Examples are: Pritchett, Henry S. *Report of the Commission to Investigate the Educational System and Conditions of Vermont*. Brattleboro, Vermont: Vermont Printing Co., 1914. p. 145-46. ⁴ Flexner, Abraham, and Bachman, Frank P. *Public Education in Maryland*. New York: General Education Board, 1916. p. 152-54.

⁵ Updegraff, Harlan. "Constructive Criticism of Proposed Plans for Distribution of State Moneys to Local School Districts." *Tenth Annual Schoolmen's Week Proceedings*, 1923. Philadelphia: University of Pennsylvania Press, 1923. p. 102.

⁶ Strayer, George D., and Haig, Robert M. *The Financing of Education in the State of New York*. New York: Macmillan Co., 1923. p. 172.

⁷ Reeves, Floyd W. *The Political Unit of Public School Finance in Illinois*. New York: Macmillan Co., 1924. p. 72-73. ⁸ Morrison, H. C. *The Financing of Public Schools in the State of Illinois*. New York: Macmillan Co., 1924. p. 52. ⁹ Russell, William F.; Holy, Thomas C.; and Stone, Raleigh W. *The Financing of Education in Iowa*. New York: Macmillan Co., 1925. p. 142.

¹⁰ Mort, Paul R. *State Support for Public Education*. Washington, D. C.: American Council on Education, 1933. p. 135.

limited in the changes it can make without state action. The power to adjust the tax system, therefore, lies with the state government and the true criterion of the relative ability of local communities to pay for education is the ability to pay under the taxing system established by the state rather than the ability to pay under an ideal taxing system."⁸

Actual practise bears out Mort's contention that no substitute has been discovered for the tax rate on equalized assessments of property as a measure of effort. Maguire, in his study of trends and equalization practises, found the frequency with which various factors have been included in the equalization plans of all the states from the beginning of the practise to the present. He discovered that "the most common provision of equalization laws is the requirement that the local unit levy a specified tax rate on property."⁹ He found no other measure of effort being used; nor does he relate the finding of any attempts to refine this measure.

The Measurement of the Efforts of States To Support Education

As early as 1905 William T. Harris, then United States Commissioner of Education, recognized the great differences in effort required of the states to support education. In an address that year before the National Education Association he said:

The less received from taxation at a given rate for public expenses—say, school expenditure—the more the individual must pay from his own earnings; that is to say, if he is to expend an equal amount with a census division that possesses a greater amount of assessable wealth per capita. Hence, if the inhabitants of the South Atlantic and South Central Divisions, possessing less than one-half of the amount of assessable wealth per capita, are to continue their schools for the same length as the school session in the North Atlantic Division, and if they are to pay as high salaries as in that division, a very large sum would have to be made up from the annual earnings of the individuals, or else a rate of taxation nearly double that in the North Atlantic Division must be adopted. But the individual earnings in that section, as it appears,

are less than one-half those in the North Atlantic Division, and any tax paid by the individual for schooling is to the average citizen of the South a far greater burden than in the northern community.¹⁰

As a measure of effort, Commissioner Harris presented data showing by states the expenditure for public schools on each \$100 of true valuation of all real and personal property. For the year 1903 he found the extreme ratio of effort based on this measure to be 3.4 to 1.¹¹

A few state school surveys¹² have dealt with this problem to a limited extent but only one significant study of the efforts of all the states in support of public education has been made. Norton devoted a section of his study on the ability of the states to support education to this problem.¹³

Norton defined effort as "the percentage of the state's economic power annually devoted to education." His definition of "economic power" of a state for a given year was the income of the state plus one-tenth of its wealth. Whereas Norton found that the richest state was 6.11 times as able to support education as the poorest state, he found that the state putting forth the greatest effort in support of education was putting forth only 2.94 times as much effort as the state putting forth the least effort. He reached the conclusion "that in a given period different states tend to allot similar percentages of their economic power for school support whether they possess a relatively large or small number of units of economic power behind each child to be educated."¹⁴

Thus, he found no significant relationship between the efforts the states put forth in support of education and the amount of wealth and income they possessed per child.

The Measurement of the Adequacy of the Educational Programs of Local Communities

The adequacy of local school programs has been most frequently measured in terms of financial support. Many studies of this type have been made. The *Biennial Surveys* of the

⁸ *Ibid.* p. 129-30.

⁹ Maguire, Samuel H. *Trends in Principles and Practises of Equalization of Educational Opportunity*. Nashville, Tenn.: George Peabody College for Teachers, 1934. p. 106.

¹⁰ Harris, William T. "Some of the Conditions Which Cause Variation in the Rate of School Expenditures in Different Localities." *Proceedings* 1905. Washington, D. C.: the National Education Association. p. 203.

¹¹ *Ibid.* p. 205-7.

¹² Examples are: General Education Board. *Public Education in Kentucky*. New York: General Education Board, 1921. p. 202. ↑ Pittenger, B. F., and Works, George A. *Texas Educational Survey Report*, Vol. II: "Financial Support." Austin, Texas: Texas Educational Survey Commission, 1925. p. 23.

¹³ Norton, John K. *The Ability of the States to Support Education*. Washington, D. C.: National Education Association 1926. p. 48-55.

¹⁴ *Ibid.* p. 55.

United States Office of Education provide data of this nature every two years. Nearly every state and city school survey has also utilized this procedure. Such studies have been made in terms of various measures of educational load such as enrolment, average daily attendance, and population of school age.

In a few cases, attempts have been made to measure the adequacy of educational support in terms of the quality of the educational program. Reeves,¹⁵ for example, utilized such factors as length of school term, qualifications of teachers, number of days each pupil attended school, and the percent of pupils enrolled in high school.

Frasier developed an index of the quality of a city's educational program which he recognized as unsatisfactory but which he felt did contain "those measurable factors that are associated with and are the necessary corollary of efficient education."¹⁶ The factors were:

1. The percent of sixteen- and seventeen-year-old children in school
2. The percent of elementary classes having fewer than forty children enrolled
3. The percent of children who have sixty square feet or more of playground space
4. The percent of teachers who have six or more years training above the eighth grade
5. The percent of children enrolled who attend school all day and in adequate buildings owned by the city
6. The percent of the increased cost of living from 1913-14 to 1919-20 that was met by increased salaries for elementary women teachers.¹⁷

In the recent New Jersey school survey a study was made of "the efficiency and the effectiveness of the services provided in the public schools on three expenditure levels."¹⁸ This analysis showed that with regard to every major service a school should provide, the schools at the lower expenditure levels furnish services distinctly inferior to the schools at the median expenditure level, while the schools on the median level provide these services much less satisfactorily than those at the highest expenditure levels. A similar study was made as a part

of the Maine survey from which the same essential conclusions were derived.¹⁹

These studies tend to validate the theory quite generally accepted that the quality of an educational program in a local community is, in general, related to the level of expenditure in support of it.

The Measurement of the Adequacy of the Educational Programs of States

Study in this area has been devoted both to the level of financial support provided and to the educational results achieved. Comparative financial figures have been used most frequently. The *Biennial Surveys* of the United States Office of Education provide comparative financial data for state school systems every two years.

Ayres was the first to attempt to measure objectively the efficiency of the forty-eight school systems. His original study in 1912 is not widely known but his 1920 study has been much used.²⁰ The ten sets of statistical data he used come under the two main headings of (1) attendance and enrolment and (2) finance. Considerable criticism was leveled at the Ayres index because of certain weaknesses which, for the most part, Ayres himself had recognized.

In 1924 Phillips²¹ summarized the criticisms of the Ayres index and made two important adaptations of them: (1) the financial items were revised to allow for the decreased purchasing power of the dollar; and (2) the states were classified into urban, mixed, and rural types to make possible comparison of ranks among states of similar population characteristics. Phillips also reduced the number of general financial items from five to two, substituting statistics concerning illiteracy, teachers' salaries, and teacher training.

Norton measured the financial provisions made by the states for education and also measured the efficiency of the state school systems. For the latter purpose he used these criteria:

1. The average number of days schools were kept open in 1922

¹⁵ Reeves, Floyd W. *The Political Unit of Public School Finance in Illinois*. New York: Macmillan Company, 1924. p. 88-96.

¹⁶ Frasier, George Willard. *The Control of City School Finances*. Milwaukee, Wisconsin: Bruce Publishing Co., 1922. p. 68.

¹⁷ *Ibid.* p. 68-69.

¹⁸ Mort, Paul R. *Report of the Governor's School Survey Commission*. Vol. II. "Reconstruction of the System of School Support in the State of New Jersey." Trenton: Governor's School Survey Commission, 1933. p. 76-112.

¹⁹ Mort, Paul R. *The Financing of the Public Schools of Maine—Report of a Survey of State and Local Support of Public Schools*. Augusta, Maine: The Maine State School Finance Commission, 1934. p. 64-97.

²⁰ Ayres, Leonard P. *An Index Number for State School Systems*. New York: Russell Sage Foundation, 1920. p. 70.

²¹ Phillips, Frank M. "Educational Ranking of the States by Two Methods." *American School Board Journal* 69: 47-49; December, 1924.

2. Average number of days attended by each child enrolled in 1922
3. Percent of attendance in high school in 1922
4. Percent of teachers normal graduates around 1922
5. Average number of years of school life on the basis of a 180-day year.²²

In 1932 the Research Division of the National Education Association ranked the states on each of five factors indicative of state school efficiency. No attempt was made to combine them into a single rating. The factors selected were:

1. The proportion of children reached by the services of the schools
2. The holding power of the schools
3. The quality of teaching provided
4. The material school environment
5. Percent of literacy.²³

Summary

The foregoing summary of research on the problems of "effort" and "adequacy" is by no means complete. An attempt has been made, however, to present selected studies which it is believed represent all of the significant methods of approach that have been utilized.

Since Cubberley measured effort by property tax rates in 1905, there have been no essentially new developments so far as the problem pertains to local areas.

Mort justifies uniform tax rates on property as a measure of effort on the ground that this method measures effort under the tax system imposed upon local communities by the states. That complete equalization of burden cannot be achieved until ability in other forms than property has been measured, however, is recognized by students of the problem.

Norton measured the efforts of the states by the percent that educational expenditures were of a state's economic power defining the latter as taxable income plus one-tenth the full value of real estate.

The measurement of the adequacy of financial support accorded the schools in local areas has been measured (1) by the expenditures per various measures of educational load, and (2) by factors indicative of the quality of the educational program provided.

Both of these methods have also been utilized in measuring the adequacy of financial support accorded to state school systems.

²² Norton, John K. *The Ability of the States to Support Education*. Washington, D. C.: National Education Association, 1926. p. 45.

²³ National Education Association, Research Division. "Estimating State School Efficiency." *Research Bulletin* 10: 54; May, 1932. Washington, D. C.: the Association.

CHAPTER III

The Formulas and Basic Data

The first section of this chapter will present the formulas to be used in the measurement of "effort" and "adequacy" and describe how they were developed. The second main section will present the data used in the calculation of "effort" and "adequacy" in accordance with the formulas presented.

The Formulas

Effort

The effort of a state to support education may be defined, in general, as the extent to which a state exerts itself toward that end in terms of its financial ability. There are many complicating factors which make precise measurement of the efforts of the states exceedingly difficult, if not impossible. However, it is believed that the use of the formula for the measurement of effort developed in this study provides a better measure of the relative efforts of the states to support education than has hitherto been available.

Since a state spends for education out of such fiscal resources as it has, two basic factors enter into a formula for the measurement of the efforts of the states to support education: (1) the amount a state spends for education, and (2) the resources from which it has to spend. This may be expressed by the simple formula:

$$\frac{\text{The Effort of a State To Support Edu-}}{\text{cation}} = \frac{\text{Amount Spent for Education}}{\text{Financial Resources}}$$

The Expenditure Figure

Several different possibilities were considered in determining what data to use in the numerator of the fraction:

1. *Receipts from taxation and appropriation*—This amount is the total sum of money available to the schools from taxation plus money that may be appropriated from other sources. Practically all of these receipts are from taxation in one form or another. Such revenues include only funds raised by the states themselves and, in a study of effort, such a figure is desirable. But there are certain objections to its use. First, receipts from taxation and appropriation do not indicate accurately the amount of money that actually goes to provide

educational opportunities in a given year since some part of these funds are used either as direct capital outlay or for the payment of debts and interest. Second, current expenditures provide a better basis of comparison between school systems than do capital outlay and other charges. This fact is shown by the wide fluctuation of index figures for current expenses and capital outlay among the states as indicated in Table 1.¹ Third, the basic measure of educational need used in certain sections of this study was developed on the basis of current expenditures.

Over a period of several decades the first two of the foregoing objections would be largely removed. Since the bulk of school revenues come from taxation, expenditures would necessarily be approximately equal to revenue from taxation and appropriation. In the last years covered by the present study, however, with the onslaught of the depression, many states were forced to borrow large amounts in order to operate their schools. The result was that in some cases the expenditure figure was considerably higher than the amount received from taxation and appropriation. The effort in these cases was represented better by the former figure because, while the state which borrowed money was not that year taxing itself to the extent of its expenditures, it was, nevertheless, obligating itself to pay at a future date the difference between the two figures. Thus, it was decided that, particularly with reference to the year 1932, a better measure than receipts from taxation and appropriation should be sought.

2. *Total expenditures*—This figure was considered unsatisfactory for these reasons: (1) It would include expenditures for capital outlay and debt service which is undesirable for the purpose of this study as explained above; (2) a small fraction of the total expenditures of the states such as represented by revenue from the federal government and from subsidies is available to the states without effort on their part as states; (3) since this study covers a period of years, the use of total expenditures would involve a certain amount of double counting of expenditures in that money

¹ Over a long period of years there would probably be a fairly constant relationship between capital outlay and current expenses but over a short period of years there is a wide fluctuation.

realized from bond issues is listed once when the money is expended for capital outlay and a few years later it is listed again under debt service when the bonds are being retired; and (4) the measure of educational need utilized in this study is applicable only to current expenditures.

3. *Total expenditures for current expenses*—This possibility was discarded because as stated above, a small fraction of the money so expended was available to the states without effort on the part of the states as states. It was necessary to eliminate such funds as far as possible if current expenditures were chosen to represent the efforts of the states. This led to consideration of the next possibility.

4. *Total expenditures for current expenses, exclusive of interest, plus the cost of the state department of education, less the amount of the aforementioned expenditures received from the federal government and from subsidies*—This figure was finally decided upon. The interest item is not included in the expenditure figure utilized in this study for two reasons: (1) There are a number of states for which complete information on this item is lacking.² Hence, the omission of this item was mandatory since if the data were not available for some states they could not be included for any. (2) The bulk of interest charges does not represent the provision of educational opportunities in a given year as explained above. The interest on short-time loans is the only part of the interest

² According to a letter from Emery M. Foster, chief, Division of Statistics, U. S. Office of Education, dated November 19, 1934, with regard to the states where this information does not appear in the *Biennial Survey*: "There is no possible way, as far as I can see, for you to obtain figures for these states unless you were to get in touch with every city and county treasurer in those states." The explanation of this by Mr. Foster was that "there are several states in which there is legally no such thing as school bonds or interest on school bonds since all bonds are issued by the city, or county, and a single issue for a particular year covers schools, roads, water-works, etc. The only possible way to separate the schools in this set-up is to go to the city or county treasurer's office and, by going over the records, find out the amount in the original city issue which was asked for school purposes and then apply this percentage to all future interest and bond payments on this issue."

TABLE 1.—COMPARISON OF INDEXES OF EXPENDITURES FOR CURRENT EXPENSES AND CAPITAL OUTLAYS 1926 TO 1932 OF EVERY THIRD STATE SELECTED ALPHABETICALLY

1926 = 100

State		1926	1928	1930	1932
Alabama	Current expenses	100	120.4	134.2	120.5
	Capital outlay	100	103.1	90.7	17.3
California	Current expenses	100	115.9	126.4	130.2
	Capital outlay	100	80.7	62.7	36.5
Delaware	Current expenses	100	104.3	123.3	139.1
	Capital outlay	100	34.0	193.1	301.2
Idaho	Current expenses	100	107.3	113.4	103.5
	Capital outlay	100	172.7	159.9	46.6
Iowa	Current expenses	100	91.8	92.4	84.7
	Capital outlay	100	48.5	59.1	17.2
Louisiana	Current expenses	100	112.4	117.4	115.6
	Capital outlay	100	97.8	77.1	55.7
Massachusetts	Current expenses	100	115.1	120.6	119.5
	Capital outlay	100	79.4	75.7	64.0
Mississippi	Current expenses	100	135.6	134.9	134.9
	Capital outlay	100	252.3	176.9	176.9
Nebraska	Current expenses	100	103.8	106.9	100.2
	Capital outlay	100	43.9	37.1	23.4
New Jersey	Current expenses	100	115.8	130.7	138.0
	Capital outlay	100	100.6	108.1	51.6
North Carolina	Current expenses	100	109.2	118.3	102.9
	Capital outlay	100	107.9	57.2	16.4
Oklahoma	Current expenses	100	101.0	126.4	112.1
	Capital outlay	100	100.9	116.2	45.8
Rhode Island	Current expenses	100	115.8	129.5	137.5
	Capital outlay	100	115.8	89.7	97.1
Tennessee	Current expenses	100	110.1	120.7	115.7
	Capital outlay	100	128.5	52.7	54.0
Vermont	Current expenses	100	103.8	115.0	104.6
	Capital outlay	100	187.3	221.8	31.2
West Virginia	Current expenses	100	105.7	118.8	110.3
	Capital outlay	100	77.3	55.9	34.7

Read table thus: The amount expended in 1926 is given the value of 100. The relative amounts expended for the other years are shown by the index numbers. Thus Alabama spent 120.4 percent as much for current expenses in 1928 as in 1926 but only 103.1 percent as much for capital outlay.

item that could be so considered and it is so small a fraction of the total expenditure that any error caused by failure to so consider it is negligible.

The total cost of the state department of education is included because the money a state government spends for the supervision and improvement of education thru its state department of education represents effort just as much as the money spent directly upon schools. Altho not all the activities of state departments of education have to do with public elementary and secondary education, the bulk of their work is concerned with these phases of the state's educational program.³ Since there is no satisfactory method of determining the percent of the total cost of state departments that could rightfully be charged to other than the public education phases of their work, it seems better to include the entire amount than to omit the entire amount.

Receipts from subsidies of educational foundations and from the federal government clearly do not represent effort on the part of the states, as states, and were, therefore, deducted from the expenditure figure utilized in measuring effort.

It is debatable whether revenue from permanent funds and the lease of lands should be included in the expenditures of the states for education in a study of effort. The range among the states in percent of receipts for education from this source is from zero to approximately 25 percent, depending upon the year of the study under consideration. If expenditures, without regard to the source of the revenue, are used in measuring effort, states with relatively high returns from permanent funds will appear to be making greater effort than if the revenue from permanent funds is deducted from the expenditure figure utilized in measuring effort.

The problem is complicated by the fact that the derivation of "permanent funds" in the several states is exceedingly varied. Many of the states, at some time in their history, were granted school lands by the federal government. In some cases and in varying degrees,

however, these lands have been sold and the receipts placed in permanent school funds. In other cases, the state has used the principal of such funds and made itself a permanent debtor to the schools of the state, which means that revenue derived from such sources now represents effort on the part of the state. In still other cases, at least a part of the principal of permanent funds comes from such sources as fines and licenses.⁴ These funds obviously are taken from the state's own economic resources and, therefore, may be said to represent effort on the part of the state.

The decision finally reached with regard to revenue from permanent funds and school lands was to include revenue from this source in the expenditure figure used in the basic calculations. Appendix I shows the effect that deduction of these revenues has upon the relative efforts of the states to support education and indicates the maximum possible difference this factor could cause.

One item not discussed above is the expenditure of state governments for teachers' pensions and annuities. Data are not readily available for any of the years the present study covers except 1925 and 1930.⁵ On the basis of the data for these two years, estimates could be made for the other years of the study. But since there would be considerable question about the accuracy of such figures and since the total amount of expenditures for this item is an extremely small percent of the total, it was felt that there would not be sufficient gain to warrant inclusion of expenditures for this item.

Thus, for the numerator of the formula previously mentioned, it was decided to use the figure arrived at for each state by taking the expenditure of the state for current costs of public education, exclusive of interest, plus the cost of the state department of education, less revenues from the federal government and from subsidies.

In keeping with the purposes of the present study, it will be noted that this proposal does not credit the states with expenditures for private and parochial schools. Section II of the Appendix, however, shows the effect that the

³ This is clearly indicated in the following study: National Education Association, Research Division. "Staffs and Salaries in State Departments of Education." *Studies in State School Administration* No. 9. Washington, D. C.: the Association, March, 1931. 61 p.

⁴ See, for example, Indiana section of: Research Division, National Education Association. *School Finance Systems*. Series I. Washington, D. C.: the Association, November, 1934.

⁵ For these years see: Mort, Paul R. *State Support for Public Education*. Washington, D. C.: American Council on Education, 1933. p. 289, 293.

inclusion of such expenditures would have upon the relative efforts of the states to support education.

The Financial Resources Figure

With regard to the denominator of the fraction, in the effort formula proposed, several possibilities were available. The pioneer study in the area of the relative ability of the states to support education was by Norton.⁶ It was based on data from the year 1922. Since Norton's study covered only this one year at the beginning of the period included in the present study, and since more recent studies are now available, it was decided not to use his data on the ability of the states.

Two recent studies provide significant data as to the ability of the states to raise tax revenue for the support of education. These studies are by Chism⁷ and Newcomer.⁸ While both attempt to measure the taxpaying ability of the states, their objectives are not identical.

Chism's purpose was to measure the relative tax resources of the states which would result from the application of the Second Model Tax Plan of the National Tax Association.⁹ His study estimates what the relative tax resources of the states *would have been from 1922 thru 1932 if the Second Model Tax Plan had been in operation.*

While Newcomer also assumed a uniform tax in all the states and employed a tax structure similar in many respects to that employed by Chism, the rates applied were different. Her study also took account of certain tax resources specially benefiting some of the states; tax resources depending to a large extent on wealth or economic activities outside these states. Thus, Newcomer's measure of tax resources more closely approximates the actual tax resources of the states under present tax conditions than does Chism's.

Perhaps the most effective way to make clear the difference in objectives and results of these two studies is to cite a specific illustration. It is well known that the state of Delaware receives much revenue from business concerns actually located in other states but incorporated in Delaware because of the advantages to them of the Delaware incorporation law.

The tax structure used by Chism did not include a tax which credited Delaware with this revenue. He allotted to Delaware only the revenue that Delaware could have raised from the tax system based on the Second Model Tax Plan.

Newcomer, on the other hand, in addition to crediting Delaware with tax revenue from a number of taxes similar to those used by Chism also included revenue from incorporation taxes because this state, among others, was in a position to realize revenue from it.

From these two different approaches, it was not to be expected that the results of the two studies would correlate perfectly.¹⁰ The coefficient of correlation for 1930 was .904. If the special factors mentioned above were eliminated and only the basic plan of each study used, the coefficient of correlation would be higher still.

In addition to calculating total relative tax resources of the states, Chism also shows how much of these tax resources should, according to his method, be available for education. Using the customary practise of the states as the best criterion, he found that the average percent of actual tax collections allotted to education by the states, over a period of years, was 31.27 percent. He then assumed that the same percent of the total relative tax resources of the states, as he calculated them, should be allotted to education. Thus his "tax resources for education" could have been used in the present study rather than "total relative tax resources." However, inasmuch as the relative position of

⁶ Norton, John K. *The Ability of the States to Support Education*. Washington, D. C.: National Education Association, 1926. 88 p.

⁷ Chism, Leslie L. *The Economic Ability of the States: The Ability of the Various States to Raise Tax Revenue under a Plan of Taxation Based on the Model Plan of State and Local Taxation, with Special Reference to the Relative Ability of the States to Support Education*. Teachers College, Columbia University, Contributions to Education, No. 669. New York: Bureau of Publications, Teachers College, 1936. 169 p.

⁸ Newcomer, Mabel. *An Index of the Taxpaying Ability of the State and Local Governments*. New York: Bureau of Publications, Teachers College, Columbia University, 1935. 85 p. This monograph gives data for 1930 only. A revision of this monograph including data for 1920 as well as 1930 is included in: Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936. p. 115-78 and 283-308.

⁹ National Tax Association. *Second Report on a Plan of a Model System of State and Local Taxation*. 1933. 68 p.

¹⁰ Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936. p. 303.

See Table 5 of this bulletin for specific taxes used in each plan and their relative weightings.

the states is identical in both cases and since the use of the tax resources Chism decided should be allotted to education involves certain assumptions regarding which there is difference of opinion, it was decided to use "total relative tax resources" in this study.

It was decided that both the Chism and the Newcomer data should be used in the present study. Therefore, calculations will be made using the results of both of these studies as the denominator in the effort formula mentioned above. The difference in objectives of these two studies should be kept clearly in mind.¹¹

We may now restate the general formula for the measurement of the efforts of the states to support education in the specific terms finally

decided upon. The formula is $x = \frac{y}{z}$ where

x = the effort of a state to provide financial support for education

y = the current expenses of the state for education, exclusive of interest, plus the cost of the state department of education, less revenue from the federal government and from subsidies

z = the relative tax resources of the state (a) as calculated by Chism and (b) as calculated by Newcomer.

Certain recognized limitations in the effort formula proposed are discussed briefly in Appendix III.

Financial Adequacy

The first problem was to develop or select a measure of the financial adequacy of the educational programs of the states best suited to the present study. As was pointed out in Chapter II, adequacy of the educational programs of local communities and of states has been measured both by the level of the financial support per unit of educational load and by certain qualitative and quantitative measures of the educational program itself. However, satisfactory measures of many qualitative and quantitative aspects of a state's educational program have not yet been developed. Therefore, while a financial measure of adequacy is admittedly imperfect, it is at least as satisfactory as any measure now available and it has the added advantage of being an objective measure easily understood by layman as well as educator. A financial measure of adequacy was therefore selected.

Hence, a measure of the adequacy of the educational programs of the states may be expressed by the formula:

$$\text{Relative Adequacy of Financial Support} = \frac{\text{Amount Expended for Education}}{\text{Units of Educational Load}}$$

For the numerator of the right-hand member of the equation, the same expenditure figure as that used in the measurement of effort will be used for these reasons: (1) It was deemed best to measure adequacy of financial support only in terms of funds which the states had raised by their own efforts. The expenditure figure utilized in the measurement of effort excludes all other revenue, except the debatable item of revenue from permanent funds. (2) It appeared desirable to use the same data in the measurement of both "effort" and "adequacy" inasmuch as the determination of the relationship of the states to one another on the basis of these two factors is one of the purposes of the present study.

A further problem was to decide what measure of educational load should be used to convert the expenditure figures of the various states to a comparable basis. This is the figure to be used in the denominator of the right-hand member of the equation for adequacy given above. The following measures of educational load were considered for use: (1) average daily attendance in public schools; (2) population of school age five to seventeen years of age; (3) Mort's index for the measurement of educational need applied to average daily attendance.

The basic measure of educational load decided upon was the third alternative, i.e., the number of units of educational need as determined by the use of the index Mort has provided. This measure was chosen because it is a more scientific measure than the others inasmuch as it takes into account such factors as sparsity of population and cost of living.

However, for the purpose of comparison and for those who may prefer to use them, adequacy of financial support was also measured in terms of average daily attendance and number of children five to seventeen years of age. Comparisons of the relative adequacy of financial support by the use of these two measures of educational load with the basic measure utilized are presented in Appendix IV.

¹¹ For a more detailed comparison of these two studies see Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936. p. 303-05.

The Basic Data Effort

According to the effort formula already presented, two sets of data are required. The first is the expenditure figure.

Table 2 shows step by step the calculations by which the expenditure figure for 1929-30 was derived in accordance with the aforementioned plan. The amount listed in column 6 of Table 2 for any given state is the amount of

TABLE 2.—EXPENDITURES OF THE STATES FOR CURRENT EXPENSES OF PUBLIC EDUCATION LESS FUNDS NOT RAISED BY THE STATES THEMSELVES, 1929-30

State	Current expenses	Revenue received from		Cost of state departments of education	Current expenses (Col. 2) less Cols. 3 and 4 plus Col. 5
		Federal aid	Subsidies		
1	2	3	4	5	6
Continental U. S.....	\$1,834,507,895	\$7,333,834	\$844,084	\$7,840,859	\$1,834,170,836
Alabama.....	17,652,225	137,938	75,939	196,393	17,634,741
Arizona.....	8,289,546	39,301	.....	60,887	8,311,132
Arkansas.....	11,101,551	99,122	56,912	86,833	11,032,350
California.....	121,136,633	186,878	7,500	203,394	121,145,649
Colorado.....	21,125,901	36,787	.....	32,098	21,121,212
Connecticut.....	28,155,339	76,750	.....	339,393	28,417,982
Delaware.....	3,448,498	30,879	.....	53,028	3,470,647
Florida.....	13,516,229	160,382	53,540	113,065	13,415,372
Georgia.....	17,166,356	167,113	30,797	259,413	17,227,859
Idaho.....	8,553,928	21,833	.....	41,746	8,573,841
Illinois.....	123,430,692	713,552	.....	208,839	122,925,979
Indiana.....	54,666,666	210,335	.....	107,514	54,563,845
Iowa.....	44,692,503	176,372	.....	104,633	44,620,764
Kansas.....	33,857,923	86,045	.....	174,331	33,946,209
Kentucky.....	20,009,576	163,135	37,339	103,626	19,912,728
Louisiana.....	16,847,280	88,099	47,358	131,613	16,843,436
Maine.....	9,647,509	61,840	.....	61,365	9,647,034
Maryland.....	18,880,053	79,632	9,280	313,080	19,104,221
Massachusetts.....	74,034,720	219,598	.....	176,493	73,991,615
Michigan.....	96,968,550	137,347	.....	195,322	97,026,525
Minnesota.....	46,271,102	155,397	.....	125,617	46,241,322
Mississippi.....	15,757,723	133,392	90,921	95,760	15,629,170
Missouri.....	40,513,185	236,430	12,103	86,484	40,351,136
Montana.....	11,557,838	53,498	.....	51,644	11,555,984
Nebraska.....	24,123,984	184,315	.....	85,359	24,025,028
Nevada.....	2,039,602	24,993	.....	56,810	2,071,419
New Hampshire.....	6,119,532	21,832	.....	60,449	6,158,149
New Jersey.....	82,801,149	172,675	.....	252,426	82,880,900
New Mexico.....	5,884,701	41,453	.....	38,577	5,881,825
New York.....	256,705,491	567,802	.....	1,789,533	257,927,222
North Carolina.....	28,830,362	195,849	120,909	176,263	28,689,867
North Dakota.....	14,794,184	25,470	.....	60,601	14,829,315
Ohio.....	109,213,169	573,900	.....	188,391	108,827,660
Oklahoma.....	30,780,341	94,836	65,566	148,321	30,768,260
Oregon.....	16,030,009	41,790	.....	44,517	16,032,736
Pennsylvania.....	145,861,417	697,343	.....	535,620	145,699,694
Rhode Island.....	9,821,214	32,811	.....	42,781	9,831,184
South Carolina.....	13,933,522	97,478	121,078	53,144	13,768,110
South Dakota.....	13,219,921	33,381	.....	39,100	13,225,640
Tennessee.....	20,560,079	175,453	35,317	64,451	20,413,760
Texas.....	58,597,695	291,409	.....	154,307	58,460,593
Utah.....	9,052,640	35,465	.....	59,632	9,076,807
Vermont.....	4,883,970	15,640	.....	35,593	4,903,923
Virginia.....	20,026,944	154,903	72,525	184,782	19,984,298
Washington.....	27,976,728	89,985	.....	73,027	27,959,770
West Virginia.....	25,265,495	99,867	7,000	153,821	25,312,449
Wisconsin.....	44,566,798	175,000	.....	186,820	44,578,618
Wyoming.....	6,137,422	18,529	.....	33,963	6,152,856

The data in Columns 2, 3, and 4 are from the "State School Systems" section of the *Biennial Survey of the Office of Education for 1929-30*. The data in Column 5 are from *Financial Statistics of States for 1930* published by the Bureau of the Census.

money that state raised for the current expenses of education thru its own effort including revenues from permanent funds. Similar tables are not presented for other years since the process was precisely the same with one exception. In all years except 1929-30 and 1931-32, the in-

terest item had to be deducted since it was not separated from total current expenses in the *Biennial Survey* reports for those years.

The expenditure figures derived by similar calculations for the other biennial periods covered in this study are presented in Table 3.

TABLE 3.—EXPENDITURE DATA DERIVED FOR THE MEASUREMENT OF "EFFORT" AND "ADEQUACY"¹
(In thousands of dollars)

State	1919-20	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32
1	2	3	4	5	6	7	8
Continental U. S.....	\$862,429	\$1,237,285	\$1,369,581	\$1,530,736	\$1,696,820	\$1,834,171	\$1,800,336
Alabama.....	7,730	10,462	11,728	13,196	15,825	17,635	15,866
Arizona.....	4,824	5,196	6,240	6,499	7,234	8,311	8,120
Arkansas.....	5,861	7,634	8,728	10,486	11,015	11,032	9,517
California.....	39,219	63,192	77,054	95,781	110,817	121,146	124,734
Colorado.....	10,182	15,628	18,086	19,359	20,977	21,121	20,146
Connecticut.....	13,822	18,545	20,694	23,542	25,946	28,418	30,032
Delaware.....	1,512	2,317	2,576	2,850	2,944	3,471	3,930
Florida.....	5,589	7,642	8,250	13,556	19,556	13,415	13,782
Georgia.....	8,207	11,552	13,216	15,153	16,186	17,228	17,325
Idaho.....	6,186	7,771	7,331	7,550	8,083	8,574	7,826
Illinois.....	58,162	79,821	91,847	101,903	112,353	122,926	116,613
Indiana.....	28,736	50,085	44,587	47,803	56,176	54,564	51,228
Iowa.....	31,210	37,069	42,204	48,350	44,361	44,621	40,901
Kansas.....	22,529	28,312	29,465	31,040	37,832	33,946	29,842
Kentucky.....	7,120	12,579	14,439	15,617	18,291	19,913	18,984
Louisiana.....	8,940	12,789	13,435	14,381	16,027	16,843	16,552
Maine.....	5,868	7,780	8,322	8,816	9,573	9,647	9,857
Maryland.....	7,793	12,010	13,583	14,791	17,044	19,104	19,737
Massachusetts.....	38,045	51,808	58,016	61,335	70,599	73,992	73,262
Michigan.....	37,806	51,882	62,791	76,545	86,057	97,026	85,468
Minnesota.....	28,392	39,022	43,371	42,492	44,865	46,241	45,479
Mississippi.....	4,384	8,553	8,525	11,605	15,726	15,629	15,646
Missouri.....	22,874	32,394	34,823	39,820	39,597	40,351	42,029
Montana.....	9,749	10,966	9,673	10,419	10,935	11,556	10,622
Nebraska.....	17,754	25,969	20,986	22,551	23,435	24,025	22,550
Nevada.....	1,170	1,547	1,700	1,830	2,017	2,071	2,205
New Hampshire.....	3,624	4,565	5,165	5,659	5,874	6,158	6,457
New Jersey.....	32,883	46,121	54,886	63,360	73,430	82,881	87,538
New Mexico.....	3,393	4,055	4,201	4,607	4,637	5,882	6,015
New York.....	95,226	152,381	173,185	187,356	225,048	257,927	274,299
North Carolina.....	9,762	16,061	19,736	24,406	26,562	28,690	25,147
North Dakota.....	10,770	13,233	14,366	12,779	13,423	14,829	12,128
Ohio.....	54,419	79,378	82,228	91,230	101,370	108,828	98,463
Oklahoma.....	17,423	23,217	25,977	24,315	24,515	30,768	27,178
Oregon.....	7,934	11,851	12,432	14,230	15,554	16,033	15,028
Pennsylvania.....	65,796	92,251	111,473	127,474	134,888	145,700	149,625
Rhode Island.....	4,394	6,104	6,792	7,575	8,754	9,831	10,432
South Carolina.....	5,297	7,620	9,537	11,838	12,989	13,768	10,867
South Dakota.....	8,538	10,994	11,620	12,353	12,615	13,226	12,389
Tennessee.....	8,510	12,049	13,966	16,957	18,656	20,414	19,561
Texas.....	26,906	43,141	40,815	50,837	49,010	58,461	60,614
Utah.....	5,939	7,162	7,499	7,906	8,606	9,077	8,238
Vermont.....	3,618	4,248	4,054	4,266	4,423	4,904	4,437
Virginia.....	10,139	15,240	16,346	17,197	18,363	19,984	19,917
Washington.....	18,533	22,087	22,726	24,574	26,522	27,960	26,639
West Virginia.....	10,081	16,296	18,781	21,347	22,535	25,312	23,453
Wisconsin.....	22,464	32,722	37,160	37,902	39,987	44,579	44,176
Wyoming.....	3,116	3,984	4,966	5,298	5,588	6,153	5,482

¹ All expenditure figures derived by the process shown in Table 2 for 1931-32.

These data are used in the measurement of "adequacy" as well as "effort."

The other data required in the calculation of effort is that representing the ability of the states to support education. As previously explained two recent studies by Chism and Newcomer providing data of this type will be used

in the present study. Their data are presented in Table 4.

Certain differences in the objectives of these two studies were presented earlier. Table 5 shows specifically how the weightings of the various taxes utilized in the two plans compared for the year 1930. It will be noted that

TABLE 4.—THE RELATIVE TAX RESOURCES OF THE STATES¹

State	Chism (In thousands of dollars)						Newcomer (In millions of dollars)	
	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32	1920	1930
1	2	3	4	5	6	7	8	9
Continental U. S.	\$4,092,487	\$4,629,766	\$5,373,283	\$6,250,768	\$6,769,297	\$6,341,023	\$3,465.8	\$4,878.6
Alabama.....	34,130	38,669	46,419	53,108	57,537	53,141	27.2	29.1
Arizona.....	14,265	16,555	19,359	22,933	25,050	23,650	15.8	15.6
Arkansas.....	30,257	34,578	40,194	45,300	49,179	44,587	28.2	24.1
California.....	199,260	234,700	274,746	330,591	359,501	333,550	147.3	310.4
Colorado.....	38,204	42,757	48,381	54,773	61,923	58,446	35.3	38.0
Connecticut.....	70,922	81,383	94,397	110,353	121,681	116,263	45.1	88.5
Delaware.....	8,123	9,400	11,054	13,502	14,819	13,779	47.5	93.6
Florida.....	31,836	38,653	56,224	56,442	57,204	54,410	23.6	42.9
Georgia.....	46,002	52,508	61,547	70,506	75,843	72,175	44.8	35.0
Idaho.....	15,571	17,541	20,958	23,733	25,416	24,113	14.8	15.3
Illinois.....	307,474	340,565	389,689	445,503	495,822	458,407	265.7	354.9
Indiana.....	111,731	125,610	143,943	163,645	181,137	173,883	92.4	95.9
Iowa.....	125,768	135,877	153,412	173,185	198,439	191,479	142.5	97.2
Kansas.....	77,829	82,486	95,100	109,809	124,880	118,601	70.9	66.2
Kentucky.....	43,070	49,192	55,346	62,715	69,557	65,501	41.4	42.1
Louisiana.....	39,601	45,163	52,626	59,074	64,596	61,188	34.3	30.8
Maine.....	25,931	29,373	34,102	37,660	44,814	40,861	18.0	24.8
Maryland.....	53,256	59,807	67,207	75,745	86,219	82,581	42.7	70.3
Massachusetts.....	185,164	205,322	239,118	272,529	299,339	285,542	139.9	215.3
Michigan.....	149,282	174,389	207,714	242,095	260,672	240,932	112.9	195.7
Minnesota.....	102,301	113,863	129,041	147,933	166,966	162,149	86.7	90.5
Mississippi.....	24,534	28,160	33,547	38,770	41,207	37,444	25.1	20.0
Missouri.....	122,006	136,737	157,811	181,478	198,358	192,588	105.4	127.0
Montana.....	23,828	26,623	33,121	35,090	37,745	36,513	20.6	21.6
Nebraska.....	65,565	70,412	79,615	91,029	103,520	99,469	64.6	52.4
Nevada.....	7,053	7,227	7,933	9,030	10,664	10,168	7.4	12.8
New Hampshire.....	17,102	19,171	22,144	25,707	27,992	27,433	12.8	14.6
New Jersey.....	157,744	178,777	209,051	242,674	278,921	260,189	109.4	237.3
New Mexico.....	9,230	10,334	12,016	14,113	16,160	15,127	7.5	9.0
New York.....	575,060	660,266	770,639	972,833	943,267	834,313	514.4	1,038.0
North Carolina.....	52,572	61,500	72,493	83,413	87,574	83,542	46.6	51.6
North Dakota.....	27,838	29,641	34,037	38,088	43,701	42,916	26.9	18.6
Ohio.....	246,655	281,924	330,824	377,740	410,425	385,978	196.0	257.6
Oklahoma.....	51,317	56,428	67,195	76,649	85,868	77,848	56.9	57.4
Oregon.....	40,438	45,781	52,531	59,124	65,393	63,527	36.2	39.3
Pennsylvania.....	380,208	429,518	491,669	563,421	621,792	583,632	255.8	376.3
Rhode Island.....	26,508	29,433	34,395	39,808	43,052	41,546	20.8	30.9
South Carolina.....	26,644	30,595	35,341	40,527	43,663	41,182	27.8	18.0
South Dakota.....	33,301	36,940	42,565	48,677	53,078	51,555	40.9	22.9
Tennessee.....	50,456	57,542	67,076	77,070	84,122	79,220	46.2	51.3
Texas.....	128,006	147,065	169,468	198,234	216,870	205,073	113.3	139.0
Utah.....	16,704	19,007	21,704	24,862	27,321	26,323	14.4	17.1
Vermont.....	10,410	11,755	13,159	15,093	16,706	15,804	7.5	9.8
Virginia.....	57,847	65,703	75,591	86,156	94,736	93,195	44.5	52.3
Washington.....	65,887	76,387	85,194	97,312	108,713	103,638	50.7	64.0
West Virginia.....	60,006	67,312	76,151	86,023	94,733	92,614	46.7	50.1
Wisconsin.....	97,066	106,940	126,354	143,976	159,709	152,084	78.4	101.6
Wyoming.....	8,525	10,197	11,082	12,827	13,413	12,864	12.0	11.3

¹ Chism's data are presented in thousands of dollars and Newcomer's in millions of dollars just as the data are presented originally in these two studies.

TABLE 5.—COMPARISON OF RELATIVE WEIGHTING OF VARIOUS TAXES UTILIZED IN THE CHISM AND NEWCOMER STUDIES IN 1930¹

Types of taxes	Millions of dollars		Percent	
	Newcomer	Chism	Newcomer	Chism
Income.....	\$1,465.9	\$563.9	30.1	8.3
Property.....	2,465.7	4,623.8	50.5	68.3
Business.....	657.9	624.9	13.5	9.2
Corporation organization.....	179.8	.....	3.7	.....
Stock transfer.....	79.8	.....	1.6	.....
Severance.....	29.5	.....	.6	.....
Inheritance.....	.....	149.7	.....	2.2
Motor fuel.....	.....	491.5	.....	7.3
Auto license.....	.....	315.5	.....	4.7
United States Total.....	4,878.6	6,769.3	100.0	100.0

¹ Adapted from Appendix E of Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936.

the income tax is weighted much more heavily under Newcomer's plan than under Chism's but that the property tax is weighted less heavily under Newcomer's plan than under Chism's.

Both the Newcomer and the Chism plans contain three minor types of taxes not included in the other. A distinction between the types of these minor taxes is that those included in the Newcomer plan are types which significantly affect only a few states while those included in the Chism plan have, in general, a uniform affect upon all the states.

Adequacy

According to the formula already presented, the expenditure figure to be used in the measurement of adequacy is precisely the same as that to be used in the measurement of effort. These data have already been presented in Table 3.

The measurement of adequacy also requires a measure of educational load. The primary measure of educational load used in this study is the number of "units of educational need," derived by use of the index Mort has provided.¹² This method was selected as the primary measure because it seemed more valid than any other available measure for this purpose.

The procedure developed by Mort involved the following steps: (1) Average daily attendance was used as the basic figure. (2) Each high-school pupil in average daily attendance was weighted in terms of elementary pupil units by the index of 1.7. Therefore, 1.7 times the average daily attendance in high schools

plus the average daily attendance in elementary schools gives the total number of elementary average daily attendance units. Since the *Biennial Surveys* of the United States Office of Education, from which average daily attendance figures were secured, do not segregate high-school average daily attendance figures from those in elementary schools, it was necessary to estimate the correct proportions. This was done on the basis of the percent which high-school enrolment was of elementary-school enrolment. Altho this procedure is not entirely satisfactory it appeared to be the most accurate method of making the desired estimate now available. (3) The total number of elementary average daily attendance units was then multiplied by Mort's composite index, which corrects for sparsity of population and cost of living to obtain the total number of units of educational need per state.

This procedure was applied to each state for each year of the study, i.e., for the biennial periods from 1919-20 thru 1931-32. Table 6 presents the number of units of educational need as derived from these calculations.

Cautions Regarding Use of Formulas and Basic Data Presented

Effort is to be calculated on the basis of data as to tax resources by both Chism and Newcomer. The difference in objectives of these studies should be considered in the interpretation of the results based on them and of any difference in results that may be found.

All of the years covered by Chism's data and the year 1930 for Newcomer's data were abnormal to the extent that agriculture was out

¹² Mort, Paul R. "An Objective Basis for the Distribution of Federal Support to Public Education." *Teachers College Record* 36: 91-110; November, 1934.

of adjustment with other industries. Table 7 shows that these years were a "trough" period for agriculture whereas other industries remained relatively prosperous until 1930. Hence, the true relationship with regard to

effort between the agricultural and industrial states may be somewhat different from the results of this study. Chism points out the possible weakness of his data due to this fact.¹² The findings of the present study should be interpreted with reference to this situation.

¹² Chism, Leslie L. *op. cit.* p. 129.

TABLE 6.—UNITS OF EDUCATIONAL NEED BY YEARS¹

(In 1000's)

State	1919-20	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32
1	2	3	4	5	6	7	8
Continental U. S.....	22,814	26,434	27,710	28,983	30,114	31,371	33,302
Alabama.....	499	596	580	575	641	658	712
Arizona.....	75	84	91	102	115	128	138
Arkansas.....	446	507	495	482	484	466	483
California.....	756	949	1,155	1,237	1,304	1,414	1,528
Colorado.....	244	286	308	309	319	324	341
Connecticut.....	276	318	323	360	359	385	409
Delaware.....	37	41	45	46	50	52	57
Florida.....	216	238	263	336	373	365	404
Georgia.....	637	735	754	714	748	758	812
Idaho.....	131	149	143	153	157	164	171
Illinois.....	1,328	1,488	1,569	1,598	1,720	1,783	1,843
Indiana.....	648	718	806	881	891	888	977
Iowa.....	609	723	709	713	738	748	776
Kansas.....	521	584	627	623	625	642	684
Kentucky.....	463	586	571	528	598	610	657
Louisiana.....	340	395	408	408	444	484	516
Maine.....	162	181	187	189	194	200	213
Maryland.....	238	272	284	302	320	338	364
Massachusetts.....	699	785	827	903	908	947	1,003
Michigan.....	725	793	927	992	1,092	1,207	1,265
Minnesota.....	597	681	666	686	703	716	757
Mississippi.....	353	528	528	574	593	606	602
Missouri.....	784	863	871	912	904	903	950
Montana.....	149	164	162	167	172	181	190
Nebraska.....	389	454	455	473	477	466	512
Nevada.....	18	20	21	22	26	26	28
New Hampshire.....	72	79	82	87	89	93	98
New Jersey.....	604	665	719	771	824	871	931
New Mexico.....	97	94	108	114	102	131	145
New York.....	1,899	2,135	2,278	2,412	2,539	2,720	2,904
North Carolina.....	621	720	753	826	884	937	1,026
North Dakota.....	218	283	256	255	247	271	267
Ohio.....	1,120	1,360	1,449	1,531	1,557	1,659	1,734
Oklahoma.....	523	645	669	677	703	728	771
Oregon.....	228	242	254	274	284	270	347
Pennsylvania.....	1,636	1,907	1,976	2,081	2,139	2,243	2,409
Rhode Island.....	95	111	117	124	131	137	147
South Carolina.....	442	458	432	472	481	481	519
South Dakota.....	170	223	235	247	244	252	252
Tennessee.....	619	622	613	624	663	677	712
Texas.....	1,189	1,527	1,601	1,706	1,712	1,797	1,787
Utah.....	142	157	166	178	182	188	203
Vermont.....	74	85	86	81	84	87	88
Virginia.....	479	543	580	604	613	646	694
Washington.....	320	368	385	414	436	448	471
West Virginia.....	338	389	414	414	452	481	513
Wisconsin.....	533	621	692	733	725	711	807
Wyoming.....	55	62	70	73	68	84	85

¹ As calculated in this study by the application of Mort's index of educational need. See preceding page.

TABLE 7.—INDEX NUMBERS OF FARM PRICES AND PRICES PAID BY FARMERS, 1910-33¹

1910-14 = 100

Year and month	Prices paid by farmers for commodities bought	Prices received for farm products	Ratio of prices received to prices paid
1	2	3	4
1910	98	102	104
1911	101	95	94
1912	100	100	100
1913	101	101	100
1914	100	101	101
1915	105	98	93
1916	124	118	95
1917	149	175	117
1918	176	202	115
1919	202	213	105
1920	201	211	105
1921	152	125	82
1922	149	132	89
1923	152	142	93
1924	152	143	94
1925	157	156	99
1926	155	145	94
1927	153	139	91
1928	155	149	96
1929	153	146	95
1930	145	126	87
1931	124	87	70
1932	107	65	61
1933	109	70	64

¹ U. S. Department of Agriculture. Bureau of Agricultural Economics. Division of Statistical and Historical Research. *Index Numbers of Prices Paid By Farmers for Commodities Bought 1910-1934*. Washington, D. C.: The Department, June, 1933 and September, 1934. 25 p. (Mimeographed.)

Summary

The formula proposed for the measurement of the efforts of the states to support education is, with certain refinements, the relation of expenditures of the states for current expenses of education to the relative tax resources of the states. Data as to the relative tax resources of the states by both Chism and Newcomer are utilized. A detailed statement of the formula was presented. While there are certain recognized limitations in the formula proposed, the elimination of them lies beyond the scope of the present investigation. A brief discussion of some of these limitations is presented in the Appendix.

The formula proposed for the measurement of the adequacy of the financial support accorded education is the amount of money expended for current costs of education per unit of educational need. Exactly the same expenditure figure will be used in this formula as in the formula for the measurement of effort. Mort's index of educational need is used in determining the number of units of educational load in each state. Two other measures of need will also be used enough for comparative purposes.

The basic data to be used in the measurement of both effort and adequacy have also been presented in this chapter.

CHAPTER IV

The Efforts of the States To Support Education

The formula and the basic data for the measurement of the efforts of the states to support education were presented in Chapter III. In general terms the formula for the measurement of effort is:

$$\text{Effort} = \frac{\text{Amount Spent for Education}}{\text{Financial Resources}}$$

Effort was measured in terms of two sets of data on the relative financial ability of the states. These are the studies of the relative tax resources of the states by Chism and Newcomer. It should be kept constantly in mind that these two studies had different objectives as explained in Chapter III. Any difference in the findings as to the efforts of the states as measured by the use of these two sets of data should be interpreted in light of the difference in objectives mentioned.

Effort Using Chism's Data

Table 8 shows the percent the expenditures of the states for current costs of education were of relative tax resources for the biennial years 1921-22 thru 1931-32 on the basis of Chism's data. The indexes of these percents are given in Table 9, showing for each year the relation of the effort of each state to the effort of the United States as a whole. Examination of Table 8 will show no marked tendency for any particular group or type of state to put forth more or less effort than any other group or type.

Table 10 consists of another set of index numbers showing the trend in the effort of each state over the period of the study in terms of the effort it put forth in 1922. The United States as a whole spent a smaller percent of tax resources for education each year after 1922 than it did in that year. As would be expected in view of this, only a few states—California, Michigan, New Jersey, and Tennessee—kept their percent of tax resources expended for education as high or higher than in 1921-22 for each of the five remaining biennial

years under consideration. Among the states showing the greatest decline over the period of the study are Idaho, Indiana, Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Utah, and Vermont.

The average percent given in column 8 of Table 8 is shown graphically in Figure 1.

Certain characteristics of the data in Table 8 are presented in Table 11. For both the United States as a whole and the mean of the 48 states, the percent of tax resources expended for education declined thruout the period of the study except that 1931-32 was slightly higher than 1929-30 in both cases. The range and standard deviation also tended to decrease thruout the period of the study.

Table 12 gives the rank of the states on the percent of tax resources expended for education for each year as presented in Table 8. While considerable consistency will be noted in the rank of the states thruout the period of the study, there was nevertheless a considerable amount of variation and a few marked changes.¹

For the average of the six years, Wyoming was the highest ranking state as to effort followed by New Mexico, North Dakota, Colorado, Oklahoma, Idaho, Mississippi, Utah, Michigan, Indiana, Arizona, and Montana comprising in order the upper ranking one-fourth of the states.

The lowest ranking state as to effort was Nevada preceded by Maryland which had the next lowest ranking, then Rhode Island, Virginia, Missouri, Arkansas, Georgia, Tennessee, New Hampshire, Pennsylvania, Connecticut, and Florida comprising in ascending order the lower ranking one-fourth of the states.

Effort Using Newcomer's Data

Table 13 presents the percent the expenditures of the states for current costs of education were of relative tax resources in the two years for which Newcomer provides data. It

¹ The most pronounced of these was in the case of Florida which advanced in place from 44 in 1925-26 to 6.5 in 1927-28 and then dropped back to 34 in 1929-30. At first it was thought that this must be due to an error in the calculations but careful rechecking found them to be correct. The cause was a greatly enlarged expenditure in Florida during the year in question as shown by the following tabulation of data, the expenditures having been verified by correspondence with the Florida State Department of Education:

	1925-26	1927-28	1929-30
Relative tax resources (in thousands).....	\$56,224	\$56,442	\$57,204
Expenditures (in thousands)	13,556	19,556	13,415

likewise gives the indexes of these percents. Figure II is a graphic presentation of the percents for 1930 taken from column 3 of Table 13.

The range in the efforts of the states to support education was very great as calculated

on the basis of Newcomer's data as to the relative tax resources of the states. Delaware put forth the least effort, expending only 3.2 percent of its relative tax resources for education in 1920 whereas Vermont put forth the greatest effort, expending 48.0 percent of its rela-

TABLE 8.—PERCENT OF TAX RESOURCES (CHISM) EXPENDED BY THE STATES FOR CURRENT COSTS OF PUBLIC EDUCATION, 1922-32

State	Years						Average	Index col. 8 U. S. = 100
	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32		
1	2	3	4	5	6	7	8	9
Continental U. S.....	30.2	29.6	28.5	27.1	27.1	28.4	28.5	100.0
Alabama.....	30.7	30.3	28.4	29.8	30.6	29.9	30.0	105.3
Arizona.....	36.4	37.7	33.6	31.5	33.2	34.3	34.5	121.1
Arkansas.....	25.2	25.2	26.1	24.3	22.4	21.3	24.1	84.6
California.....	31.7	32.8	34.9	33.5	33.7	37.4	34.0	119.3
Colorado.....	40.9	42.3	40.0	38.3	34.1	34.5	38.4	134.7
Connecticut.....	26.1	25.4	24.9	23.5	23.4	25.8	24.9	87.4
Delaware.....	28.5	27.4	25.8	21.8	23.4	28.5	25.9	90.9
Florida.....	24.0	21.3	24.1	34.6	23.5	25.3	25.5	89.5
Georgia.....	25.1	25.2	24.6	23.0	22.7	24.0	24.1	84.6
Idaho.....	49.9	41.8	36.0	34.1	33.7	32.5	38.0	133.3
Illinois.....	26.0	27.0	26.1	25.2	24.8	25.4	25.8	90.5
Indiana.....	44.8	35.5	33.2	34.3	30.1	29.5	34.6	121.4
Iowa.....	29.5	31.1	31.5	25.6	22.5	21.4	26.9	94.4
Kansas.....	36.4	35.7	32.6	34.5	27.2	25.2	31.9	111.9
Kentucky.....	29.2	29.4	28.2	29.2	28.6	29.0	28.9	101.4
Louisiana.....	32.3	29.7	27.3	27.1	26.1	27.1	28.3	99.3
Maine.....	30.0	28.3	25.9	25.4	21.5	24.1	25.9	90.9
Maryland.....	22.6	22.7	22.0	22.5	22.2	23.9	22.7	79.6
Massachusetts.....	28.0	28.3	25.7	25.9	24.7	25.7	26.4	92.6
Michigan.....	34.8	36.0	36.9	35.6	37.2	35.5	36.0	126.3
Minnesota.....	38.1	38.1	32.9	30.3	27.7	28.0	32.5	114.0
Mississippi.....	34.9	30.3	34.6	40.6	37.9	41.8	36.7	128.8
Missouri.....	26.6	25.5	25.2	21.8	20.3	21.8	23.5	82.5
Montana.....	46.0	36.3	31.5	31.2	30.6	29.1	34.1	119.6
Nebraska.....	39.6	29.8	28.3	25.7	23.2	22.7	28.2	98.9
Nevada.....	21.9	23.5	23.1	22.3	19.4	21.7	22.0	77.2
New Hampshire.....	26.7	26.9	25.6	22.8	22.0	23.5	24.6	86.3
New Jersey.....	29.2	30.7	30.3	30.3	29.7	33.6	30.6	107.4
New Mexico.....	43.9	40.7	38.3	32.9	36.4	39.8	38.7	135.8
New York.....	26.5	26.2	24.3	23.1	27.3	32.9	26.7	93.7
North Carolina.....	30.6	32.1	33.7	31.8	32.8	30.1	31.9	111.9
North Dakota.....	47.5	48.5	37.5	35.2	33.9	28.3	38.5	135.1
Ohio.....	32.2	29.2	27.6	26.8	26.5	25.5	28.0	98.2
Oklahoma.....	45.2	46.0	36.2	32.0	35.8	34.9	38.4	134.7
Oregon.....	29.3	27.2	27.1	26.3	24.5	23.7	26.4	92.6
Pennsylvania.....	24.3	26.0	25.9	23.9	23.4	25.6	24.9	87.4
Rhode Island.....	23.0	23.1	22.0	22.0	22.8	25.1	23.0	80.7
South Carolina.....	28.6	31.2	33.5	32.1	31.5	26.4	30.6	107.4
South Dakota.....	33.0	31.5	29.0	25.9	24.9	24.0	28.1	98.6
Tennessee.....	23.9	24.3	25.3	24.2	24.3	24.7	24.5	86.0
Texas.....	33.7	27.8	30.0	24.7	27.0	29.6	28.8	101.1
Utah.....	42.9	39.5	36.4	34.6	33.2	31.3	36.3	127.4
Vermont.....	40.8	34.5	32.4	29.3	29.4	28.1	32.4	113.7
Virginia.....	26.3	24.9	22.8	21.3	21.1	21.4	23.0	80.7
Washington.....	33.5	29.8	28.8	27.3	25.7	25.7	28.5	100.0
West Virginia.....	27.2	27.9	28.0	26.2	26.7	25.3	26.9	94.4
Wisconsin.....	33.7	34.7	30.0	27.8	27.9	29.0	30.5	107.0
Wyoming.....	46.7	48.7	47.8	43.6	45.9	42.6	45.9	161.1

Read table thus: In 1921-22, Alabama expended 30.7 percent of its tax resources for education. The data from which this figure is derived are taken from Table 3, which shows that in 1921-22 Alabama spent 10,462 thousands of dollars for education and from Table 4, which shows that according to Chism's data the relative tax resources of Alabama in the same year were 34,130 thousands of dollars, the former figure being 30.7 percent of the latter. Similarly read data for other states and years.

tive tax resources for education. Thus Vermont in 1920 put forth 15 times as much effort as Delaware. The mean percent ² of tax re-

sources expended by the states for public education was 27.0 and the standard deviation was 8.7. The percent ² was 24.9 for the United

² See footnotes to Table 11 for explanation of difference between mean percent and the percent for the United States.

TABLE 9.—INDEX OF PERCENT OF RELATIVE TAX RESOURCES (CHISM) EXPENDED BY THE STATES FOR CURRENT COSTS OF PUBLIC EDUCATION, 1922-32

United States = 100

State	Years					
	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32
1	2	3	4	5	6	7
Continental U. S.	100.0	100.0	100.0	100.0	100.0	100.0
Alabama	101.7	102.4	99.6	110.0	112.9	105.3
Arizona	120.5	127.4	117.9	116.2	122.5	120.8
Arkansas	83.4	85.1	91.6	89.7	82.7	75.0
California	105.0	110.8	122.5	123.6	124.4	131.7
Colorado	135.4	142.9	140.4	141.3	125.8	121.5
Connecticut	86.4	85.8	87.4	86.7	86.3	90.8
Delaware	94.4	92.6	90.5	80.4	86.3	100.4
Florida	79.5	72.0	84.6	127.7	86.7	89.1
Georgia	83.1	85.1	86.3	84.9	83.8	84.5
Idaho	165.2	141.2	126.3	125.8	124.4	114.4
Illinois	86.1	91.2	91.6	93.0	91.5	89.4
Indiana	148.3	119.9	116.5	126.6	111.1	103.9
Iowa	97.7	105.1	110.5	94.5	83.0	75.4
Kansas	120.5	120.6	114.4	127.3	100.4	88.7
Kentucky	96.7	99.3	98.9	107.7	105.5	102.1
Louisiana	107.0	100.3	95.8	100.0	96.3	95.4
Maine	99.3	95.6	90.9	93.7	79.3	84.9
Maryland	74.8	76.7	77.2	83.0	81.9	84.2
Massachusetts	92.7	95.6	90.2	95.6	91.1	90.5
Michigan	115.2	121.6	129.5	131.4	137.3	125.0
Minnesota	126.2	128.7	115.4	111.8	102.2	98.6
Mississippi	115.6	102.4	121.4	149.8	139.9	147.2
Missouri	88.1	86.1	88.4	80.4	74.9	76.8
Montana	152.3	122.6	110.5	115.1	112.9	102.5
Nebraska	131.1	100.7	99.3	94.8	85.6	79.9
Nevada	72.5	79.4	81.1	82.3	71.6	76.4
New Hampshire	88.4	90.9	89.8	84.1	81.2	82.7
New Jersey	96.7	103.7	106.3	111.8	109.6	118.3
New Mexico	145.4	137.5	134.4	121.4	134.3	140.1
New York	87.7	88.5	85.3	85.2	100.7	115.8
North Carolina	101.3	108.4	118.2	117.3	121.0	106.0
North Dakota	157.3	163.9	131.6	129.9	125.1	99.6
Ohio	106.6	98.6	96.8	98.9	97.8	89.8
Oklahoma	149.7	155.4	127.0	118.1	132.1	122.9
Oregon	97.0	91.9	95.1	97.0	90.4	83.5
Pennsylvania	80.5	87.8	90.9	88.2	86.3	90.1
Rhode Island	76.2	78.0	77.2	81.2	84.1	88.4
South Carolina	94.7	105.4	117.5	118.5	116.2	93.0
South Dakota	109.3	106.4	101.8	95.6	91.9	84.5
Tennessee	79.1	82.1	88.8	89.3	89.7	87.0
Texas	111.6	93.9	105.3	91.1	99.6	104.2
Utah	142.1	133.4	127.7	127.7	122.5	110.2
Vermont	135.1	116.6	113.7	108.1	108.5	98.9
Virginia	87.1	84.1	80.0	78.6	77.9	75.4
Washington	110.9	100.7	101.1	100.7	94.8	90.5
West Virginia	90.1	94.3	98.2	96.7	98.5	89.1
Wisconsin	111.6	117.2	105.3	102.6	103.0	102.1
Wyoming	154.6	164.5	167.7	160.9	169.4	150.0

Read table thus: This table is based on the data presented in Table 8, which show that in 1921-22 the United States as a whole expended 30.2 percent of its tax resources for education while Alabama expended 30.7 percent of its tax resources for the same purpose. Taking the United States figure as 100, the figure for Alabama yields an index number of 101.7, i.e., it is 101.7 percent of the United States figure. Similarly read data for other states and years.

States as a whole.

In 1930 Delaware expended only 3.7 percent of its relative tax resources for education whereas North Dakota at the other extreme expended 79.6 percent, putting forth 21.5

times as much effort as Delaware. The mean percent of tax resources expended by the states for education was 45.9 and the standard deviation, 14.2. The percent was 37.6 for the United States.

TABLE 10.—INDEX OF PERCENT OF RELATIVE TAX RESOURCES (CHISM) EXPENDED BY THE STATES FOR CURRENT COSTS OF PUBLIC EDUCATION, 1922-32

1922 = 100

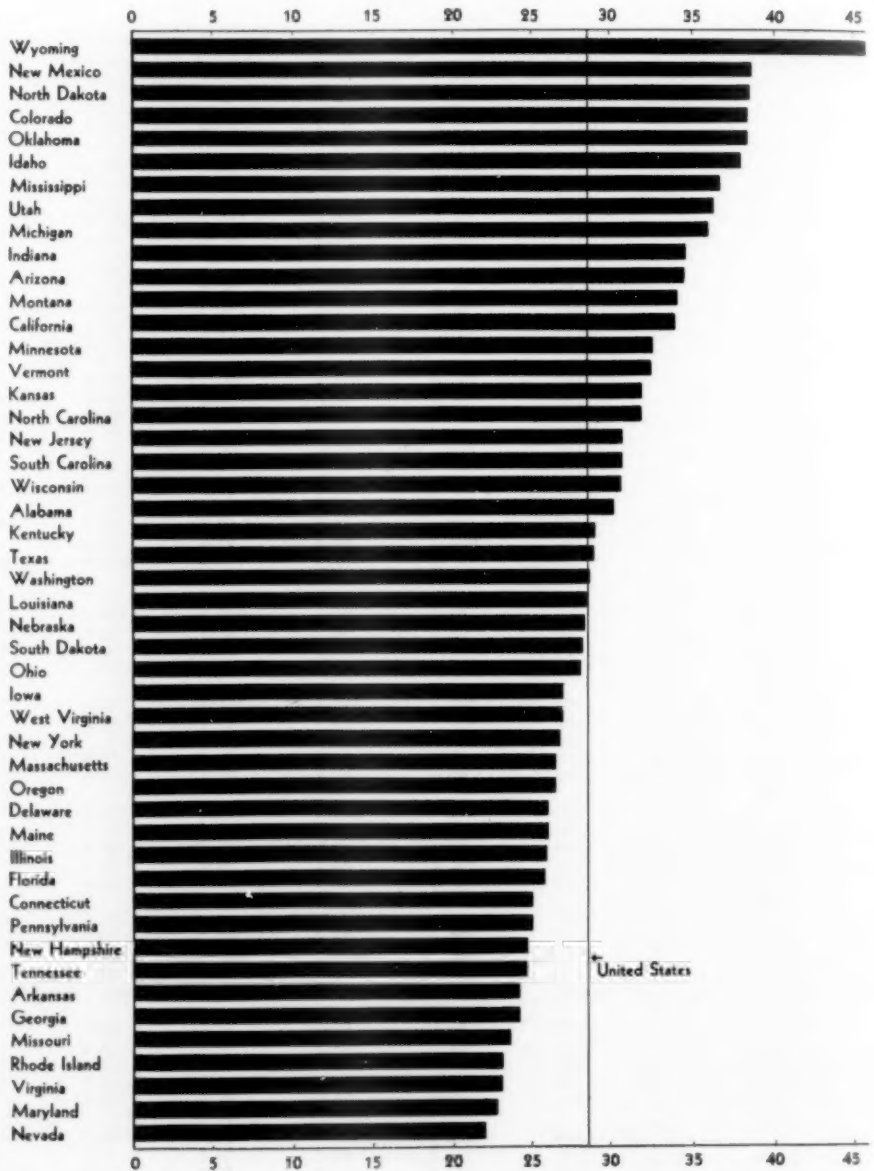
State	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32
1	2	3	4	5	6	7
Continental U. S.....	100	98.0	94.4	89.7	89.7	94.0
Alabama.....	100	98.7	92.5	97.1	99.7	97.4
Arizona.....	100	103.6	92.3	86.5	91.2	94.2
Arkansas.....	100	100.0	103.6	96.4	88.9	84.5
California.....	100	103.5	110.1	105.7	106.3	118.0
Colorado.....	100	103.4	97.8	93.6	83.4	84.4
Connecticut.....	100	97.3	95.4	90.0	89.7	98.9
Delaware.....	100	96.1	90.5	76.5	82.1	100.0
Florida.....	100	88.8	100.4	144.2	97.9	105.4
Georgia.....	100	100.4	98.0	91.6	90.4	95.6
Idaho.....	100	83.8	72.1	68.3	67.5	65.1
Illinois.....	100	103.8	100.4	96.9	95.4	97.7
Indiana.....	100	79.2	74.1	76.6	67.2	65.8
Iowa.....	100	105.4	106.8	86.8	76.3	72.5
Kansas.....	100	98.1	89.6	94.8	74.7	69.2
Kentucky.....	100	100.7	96.6	100.0	97.9	99.3
Louisiana.....	100	92.0	84.5	83.9	80.8	83.9
Maine.....	100	94.3	86.3	84.7	71.7	80.3
Maryland.....	100	100.4	97.3	99.6	98.2	105.8
Massachusetts.....	100	101.1	91.8	92.5	88.2	91.8
Michigan.....	100	103.4	106.0	102.3	106.9	102.0
Minnesota.....	100	100.0	86.4	79.5	72.7	73.5
Mississippi.....	100	86.8	99.1	116.3	108.6	119.8
Missouri.....	100	95.9	94.7	82.0	76.3	82.0
Montana.....	100	78.9	68.5	67.8	66.5	63.3
Nebraska.....	100	75.3	71.5	64.9	58.6	57.3
Nevada.....	100	107.3	105.5	101.8	88.6	99.1
New Hampshire.....	100	100.7	95.9	85.4	82.4	88.0
New Jersey.....	100	105.1	103.8	103.8	101.7	115.1
New Mexico.....	100	92.7	87.2	74.9	82.9	90.7
New York.....	100	98.9	91.7	87.2	103.0	124.2
North Carolina.....	100	104.9	110.1	103.9	107.2	98.4
North Dakota.....	100	102.1	78.9	74.1	71.4	59.6
Ohio.....	100	90.7	85.7	83.2	82.3	79.2
Oklahoma.....	100	101.8	80.1	70.8	79.2	77.2
Oregon.....	100	92.8	92.5	89.8	83.6	80.9
Pennsylvania.....	100	107.0	106.6	98.4	96.3	105.3
Rhode Island.....	100	100.4	95.7	95.7	99.1	109.1
South Carolina.....	100	109.1	117.1	112.2	110.1	92.3
South Dakota.....	100	95.5	87.9	78.5	75.5	72.7
Tennessee.....	100	101.7	105.9	101.3	101.7	103.3
Texas.....	100	82.5	89.0	73.3	80.1	87.8
Utah.....	100	92.1	84.8	80.7	77.4	73.0
Vermont.....	100	84.6	79.4	71.8	72.1	68.9
Virginia.....	100	94.7	86.7	81.0	80.2	81.4
Washington.....	100	89.0	86.0	81.5	76.7	76.7
West Virginia.....	100	102.6	102.9	96.3	98.2	93.0
Wisconsin.....	100	103.0	89.0	82.5	82.8	86.1
Wyoming.....	100	104.3	102.4	93.4	98.3	91.2

Read table thus: This table is based on the data presented in Table 8, which show that in 1921-22 Alabama expended 30.7 percent of its tax resources for education. This is given the value of 100 in Column 2. In 1923-24 Alabama expended 30.3 percent of its tax resources for education, which yields an index number of 98.7 in terms of the 1921-22 figure. In other words, 30.3 is 98.7 percent of 30.7. Similarly read data for other states and years.

FIGURE I

RELATIVE EFFORTS OF THE STATES TO SUPPORT EDUCATION 1922-32

As Shown by Average Percent of Tax Resources (Chism) Expended for Current Costs of Public Education



Research Division, National Education Association

This chart based on data in Table 8, Column 8.

The extreme ratios in effort are partly due to the fact that Delaware's relative tax resources are very great according to Newcomer's data. But even excluding Delaware and taking the state with the next lowest effort, which was Nevada spending 16.4 percent of its relative tax resources for education, the ratio is 4.85 to 1 for 1930.

In Table 14 the states are ranked on the percent of relative tax resources expended for education as presented in Table 13. The gain or loss in rank of each of the states from 1920 to 1930 is also shown in this table. Not much reliance can be placed upon the latter trend data inasmuch as Newcomer's data are available only for these two years.

Differences in Effort Based on Chism's and Newcomer's Data

Direct comparison cannot be made of the percents of tax resources expended for education on the basis of Chism's and Newcomer's data since the United States total of the relative tax resources as calculated by Newcomer is considerably less than the corresponding figure in Chism's estimate which approximates the actual tax collection figure for the United States. This variation in total relative tax resources of the United States is largely accounted for by the difference in objectives of the two studies. Chism purposely set his theoretical tax levies high enough to bring in an amount approximately equal to actual tax collections. From his data he was able to determine the relative ability of the states to support education. Newcomer was interested only

in determining the relative ability of the states to support education, and did not attempt to make the total of the relative tax resources of the states equal the total actual tax collections of local and state governments.

The efforts of the states to support education as calculated on the basis of the two studies can be compared by using the indexes of the effort figures derived as presented in Tables 9 and 13. These indexes show the relation of the effort of each state to the effort of the United States as a whole. Comparison of the indexes of effort for Alabama for 1930, for example, will show whether this state put forth more or less effort as related to the United States as a whole on the Chism data than on the Newcomer data.

Figure III shows graphically the relation between the indexes of effort based on the Chism and Newcomer studies for the year 1930, the only year for which data were available from both. Because a few states, particularly Delaware, have relative tax resources so foreign to the general distribution—according to Newcomer's calculations—the index of effort based on her data is greater than 100 in thirty-seven of the states. When Chism's data are used only twenty-three of the index numbers exceed 100. As a result the bar representing the index when effort is calculated on the basis of Newcomer's data is longer in about three-fourths of the states than that based on Chism's data.

The coefficient of correlation for the data on which Figure III is based is $.65 \pm .06$. The coefficient found between the indexes of effort

TABLE 11.—CERTAIN CHARACTERISTICS OF PERCENT OF TAX RESOURCES OF THE STATES (CHISM) EXPENDED FOR CURRENT COSTS OF EDUCATION

Year	Highest state		Lowest state		Difference between highest and lowest percent	Ratio of highest to lowest	United States percent ^a	Mean of the states ^b	Standard deviation
	Name	Percent	Name	Percent					
1	2	3	4	5	6	7	8	9	10
1921-22	Idaho	49.9	Nevada	21.9	28.0	2.28	30.2	32.7	7.5
1923-24	Wyoming	48.7	Florida	21.3	27.4	2.29	29.6	31.4	6.6
1925-26	Wyoming	47.8	Maryland	22.0	25.8	2.17	28.5	29.9	5.4
1927-28	Wyoming	43.6	Virginia	21.3	22.3	2.05	27.1	28.7	5.3
1929-30	Wyoming	45.9	Nevada	19.4	26.5	2.37	27.1	27.9	5.4
1931-32	Wyoming	42.6	Arkansas	21.3	21.3	2.00	28.4	28.5	5.3

Read table thus: In 1921-22 Idaho expended 49.9 percent of its tax resources for education whereas Nevada expended only 21.9 percent of its tax resources for education. The difference between these two figures is 28.0. The ratio of the highest percent to the smallest is 2.28. The percent for the United States as a whole was 30.2 while the mean for the 48 states was 32.7. The standard deviation was 7.5.

^a This figure is the percent the total expenditures for current costs of education in the 48 states were of the total tax resources of the 48 states.

^b This figure is the average of the percents of tax resources expended for education in each of the 48 states, i.e., the percents for the individual states were totaled and divided by 48.

based on Newcomer's data for 1920 and Chism's data for 1922 is $.70 \pm .05$.

The extent to which there is lack of correla-

tion as to the efforts of the states to support education on the basis of the two studies is due to the differences in relative ability of the

TABLE 12.—STATES RANKED BY PERCENT EXPENDITURES FOR CURRENT COSTS OF PUBLIC EDUCATION WERE OF TAX RESOURCES (CHISM)

State	Rank						Rank for six years combined *	Gain or loss in rank 1922-32
	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32		
1	2	3	4	5	6	7	8	9
Alabama.....	24	22.5	25	20	14.5	14	21	10
Arizona.....	13.5	9	12	16	10.5	8	11	5.5
Arkansas.....	41	41.5	32.5	36	42	48	42.5	-7
California.....	23	16	9	11	8.5	4	13	19
Colorado.....	9	4	2	3	6	7	4.5	2
Connecticut.....	39	40	41	39	36	26	38.5	13
Delaware.....	32	33	36	46.5	36	20	34.5	12
Florida.....	44	48	44	6.5	34	32.5	37	11.5
Georgia.....	42	41.5	42	41	40	38.5	42.5	3.5
Idaho.....	1	5	8	10	8.5	11	6	-10
Illinois.....	40	35	32.5	34	30	31	36	9
Indiana.....	6	13	14	9	16	16	10	-10
Iowa.....	27	20	18.5	32	41	46.5	29.5	-19.5
Kansas.....	13.5	12	16	8	23	34	16.5	-20.5
Kentucky.....	29.5	27	27	22	19	18.5	22	11
Louisiana.....	21	26	30	25	27	24	25	-3
Maine.....	26	29.5	34.5	33	45	37	34.5	-11
Maryland.....	47	47	47.5	43	43	40	47	7
Massachusetts.....	33	29.5	37	29.5	31	27.5	32.5	5.5
Michigan.....	16	11	5	4	3	5	9	11
Minnesota.....	12	8	15	18.5	21	23	14	-11
Mississippi.....	15	22.5	10	2	2	2	7	13
Missouri.....	36	39	40	46.5	47	44	44	-8
Montana.....	4	10	18.5	17	14.5	17	12	-13
Nebraska.....	11	24.5	26	31	38	43	26	-32
Nevada.....	48	45	45	44	48	45	48	3
New Hampshire.....	35	36	38	42	44	42	40	-7
New Jersey.....	29.5	21	20	18.5	17	9	18.5	20.5
New Mexico.....	7	6	3	12	4	3	2	4
New York.....	37	37	43	40	22	10	31	27
North Carolina.....	25	17	11	15	12	13*	16.5	12
North Dakota.....	2	2	4	5	7	21	3	-19
Ohio.....	22	28	29	26	26	30	28	-8
Oklahoma.....	5	3	7	14	5	6	4.5	-1
Oregon.....	28	34	31	27	32	41	32.5	-13
Pennsylvania.....	43	38	34.5	38	36	29	38.5	14
Rhode Island.....	46	46	47.5	45	39	35	45.5	11
South Carolina.....	31	19	13	13	13	25	18.5	6
South Dakota.....	20	18	23	29.5	29	38.5	27	-18.5
Tennessee.....	45	44	39	37	33	36	41	9
Texas.....	17.5	32	21.5	35	24	15	23	2.5
Utah.....	8	7	6	6.5	10.5	12	8	-4
Vermont.....	10	15	17	21	18	22	15	-12
Virginia.....	38	43	46	48	46	46.5	45.5	-8.5
Washington.....	19	24.5	24	24	28	27.5	24	-8.5
West Virginia.....	34	31	28	28	25	32.5	29.5	1.5
Wisconsin.....	17.5	14	21.5	23	20	18.5	20	-1
Wyoming.....	3	1	1	1	1	1	1	2

Read table thus: In 1921-22 twenty-three states expended a greater percent of tax resources for education than Alabama which thus ranked 24. In case two states expended the same percent of tax resources for education each state was given a ranking halfway between the two rank numbers they would otherwise have been given. Thus in 1923-24 Alabama and Mississippi are both ranked 22.5 these two figures taking the place of rank numbers 22 and 23. For the six years taken as one, Alabama ranked 21. From 1921-22 to 1931-32 Alabama gained 10 places in rank. Similarly interpret table for other states.

* Based on Column 8, Table 8.

TABLE 13.—PERCENT OF TAX RESOURCES (NEWCOMER) EXPENDED BY THE STATES FOR CURRENT COSTS OF EDUCATION

State	Percent		Index—U. S.=100	
	1919-20	1929-30	1919-20	1929-30
1	2	3	4	5
Continental U. S.	24.9	37.6	100.0	100.0
Alabama.....	28.3	60.5	113.7	160.9
Arizona.....	30.4	53.2	122.1	141.5
Arkansas.....	20.9	45.6	83.9	121.3
California.....	26.6	39.0	106.8	103.7
Colorado.....	28.9	55.5	116.1	147.6
Connecticut.....	30.6	32.1	122.9	85.4
Delaware.....	3.2	3.7	12.9	9.8
Florida.....	23.7	31.2	95.2	83.0
Georgia.....	18.3	49.1	73.5	130.6
Idaho.....	41.9	56.2	168.3	149.5
Illinois.....	21.9	34.6	88.0	92.0
Indiana.....	31.1	56.9	124.9	151.3
Iowa.....	21.9	45.9	88.0	122.1
Kansas.....	31.7	51.2	127.3	136.2
Kentucky.....	17.1	47.3	68.7	125.8
Louisiana.....	25.9	54.5	104.0	144.9
Maine.....	32.8	38.7	131.7	102.9
Maryland.....	18.3	27.2	73.5	72.3
Massachusetts.....	27.2	34.4	109.2	91.5
Michigan.....	33.5	49.6	134.5	131.9
Minnesota.....	32.8	51.0	131.7	135.6
Mississippi.....	17.5	78.0	70.3	207.4
Missouri.....	21.7	31.8	87.1	84.6
Montana.....	47.1	53.7	189.2	142.8
Nebraska.....	27.6	45.8	110.8	121.8
Nevada.....	16.2	16.4	65.1	43.6
New Hampshire.....	28.1	42.5	112.9	113.0
New Jersey.....	30.1	34.9	120.9	92.8
New Mexico.....	45.3	65.6	181.9	174.5
New York.....	18.5	24.8	74.3	66.0
North Carolina.....	21.0	55.6	84.3	147.9
North Dakota.....	40.1	79.6	161.0	211.7
Ohio.....	27.8	42.2	111.6	112.2
Oklahoma.....	30.6	53.7	122.9	142.8
Oregon.....	21.8	40.7	87.6	108.2
Pennsylvania.....	25.7	38.7	103.2	102.9
Rhode Island.....	21.2	31.7	85.1	84.3
South Carolina.....	19.1	76.7	76.7	204.0
South Dakota.....	20.8	57.6	83.5	153.2
Tennessee.....	18.4	40.0	73.9	106.4
Texas.....	23.7	42.0	95.2	111.7
Utah.....	41.0	53.2	164.7	141.5
Vermont.....	48.0	50.0	192.8	133.0
Virginia.....	22.7	38.2	91.2	101.6
Washington.....	36.5	43.8	146.6	116.5
West Virginia.....	21.6	50.5	86.7	134.3
Wisconsin.....	28.7	43.9	115.3	116.8
Wyoming.....	25.8	54.9	103.6	146.0

Read table thus: In 1920, Alabama expended 28.3 percent of its tax resources for education. The data from which this figure was derived are taken from Table 3 which shows that in 1919-20 Alabama expended 7.7 millions of dollars for education and from Table 4 which shows that according to Newcomer's data the relative tax resources of Alabama in the same year were 27.2 millions of dollars, the former figure being 28.3 percent of the latter. Similarly read data for other states and years.

TABLE 14.—STATES RANKED BY PERCENT EXPENDITURES FOR CURRENT COSTS OF PUBLIC EDUCATION WERE OF TAX RESOURCES (NEWCOMER) 1919-20 AND 1929-30

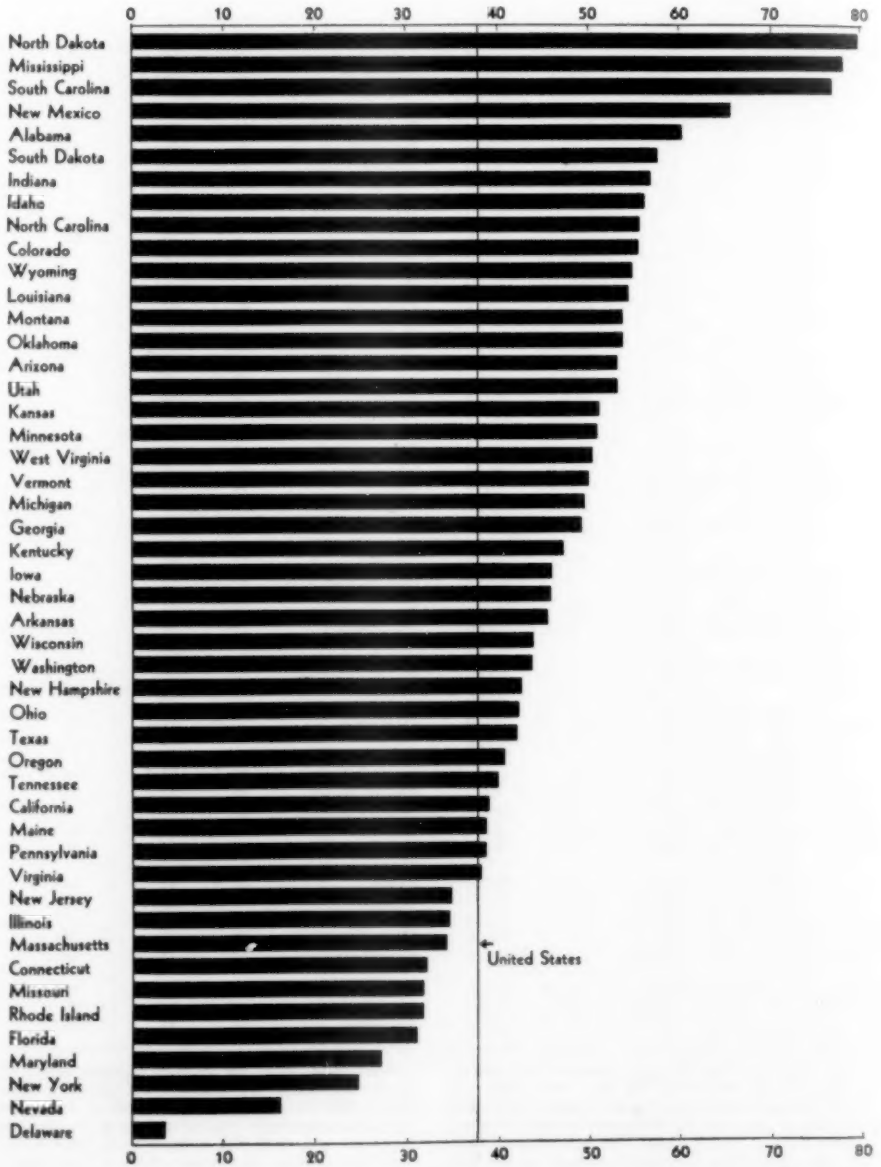
State	Rank		Ranks for 1919-20 and 1929-30 combined	Gain or loss in rank 1920-30
	1919-20	1929-30		
1	2	3	4	5
Alabama.....	19	5	9	14
Arizona.....	15	15.5	14	- 0.5
Arkansas.....	39	26	30	13
California.....	24	34	32	-10
Colorado.....	17	10	11	7
Connecticut.....	13.5	41	36	-27.5
Delaware.....	48	48	48	0
Florida.....	28.5	44	42	15.5
Georgia.....	43.5	22	29	21.5
Idaho.....	4	8	4	- 4
Illinois.....	31.5	39	41	- 7.5
Indiana.....	12	7	10	5
Iowa.....	31.5	24	28	7.5
Kansas.....	11	17	16	- 6
Kentucky.....	46	23	34.5	23
Louisiana.....	25	12	18	11
Maine.....	9.5	35.5	25	-26
Maryland.....	43.5	45	45	- 1.5
Massachusetts.....	23	40	38	-17
Michigan.....	8	21	15	-13
Minnesota.....	9.5	18	13	- 8.5
Mississippi.....	45	2	7	43
Missouri.....	34	42	43	- 8
Montana.....	2	13.5	3	-11.5
Nebraska.....	22	25	22	- 3
Nevada.....	47	47	47	0
New Hampshire.....	20	29	26	- 9
New Jersey.....	16	38	33	-22
New Mexico.....	3	4	2	- 1
New York.....	42	46	46	- 4
North Carolina.....	37	9	21	28
North Dakota.....	6	1	1	5
Ohio.....	21	30	27	- 9
Oklahoma.....	13.5	13.5	12	0
Oregon.....	33	32	37	1
Pennsylvania.....	27	35.5	34.5	- 8.5
Rhode Island.....	36	43	44	- 7
South Carolina.....	40	3	6	37
South Dakota.....	38	6	20	32
Tennessee.....	41	33	40	8
Texas.....	28.5	31	31	- 2.5
Utah.....	5	15.5	8	-10.5
Vermont.....	1	20	5	-19
Virginia.....	30	37	39	- 7
Washington.....	7	28	19	-21
West Virginia.....	35	19	24	16
Wisconsin.....	18	27	23	- 9
Wyoming.....	26	11	17	15

Read table thus: In 1919-20 eighteen states expended a greater percent of tax resources for education than Alabama which thus ranked 19. A ".5" added to a rank means that two states expended the same percent of tax resources for education and each was given a rank halfway between the two rank numbers they would otherwise have been given. For the years 1919-20 and 1929-30 combined Alabama ranked 9. From 1919-20 to 1929-30 Alabama gained 14 places in rank. Similarly read data for other states and years.

FIGURE II

RELATIVE EFFORTS OF THE STATES TO SUPPORT EDUCATION 1929-30

As Shown by the Percent of Tax Resources (Newcomer) Expended for Current Costs of Public Education

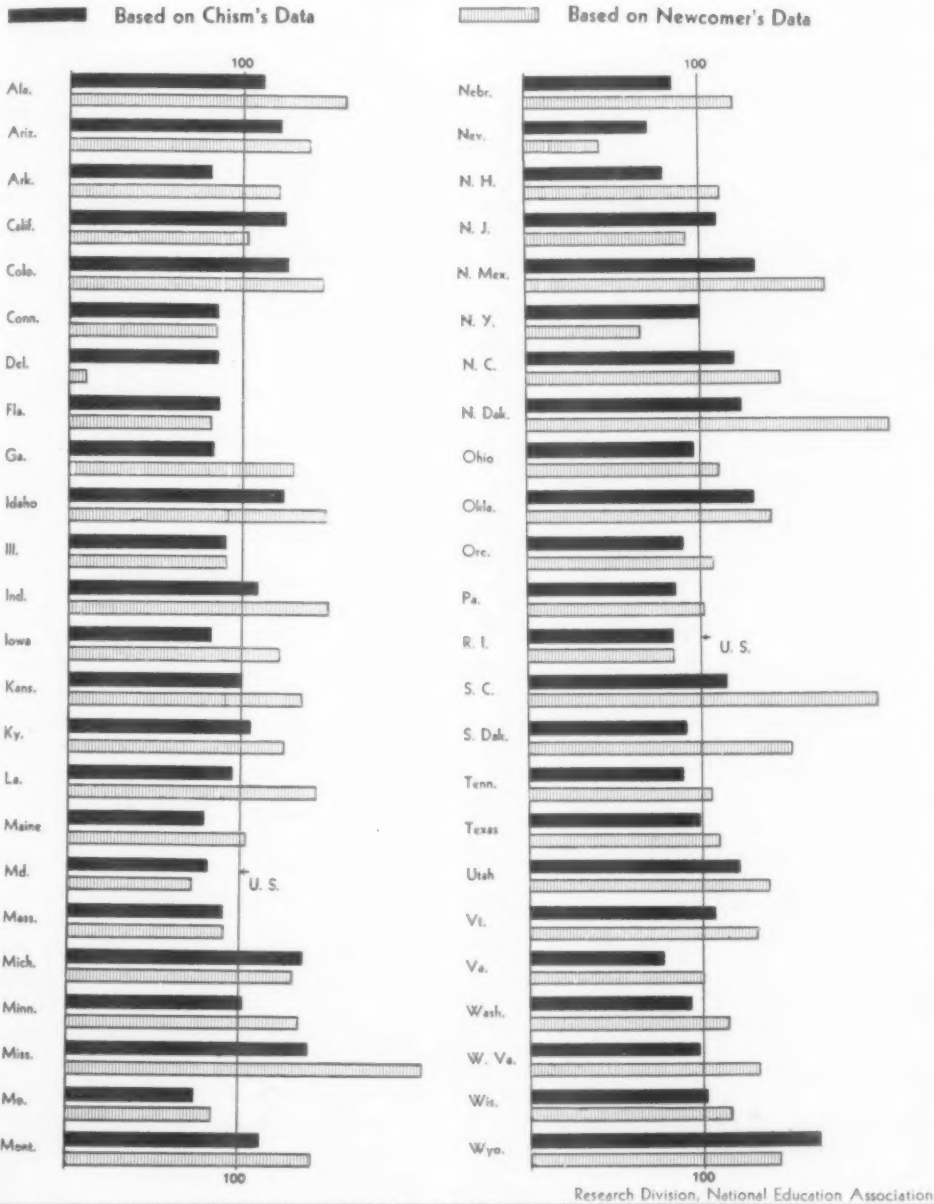


Research Division, National Education Association

This chart based on data in Table 13, Column 3.

FIGURE III

COMPARISON OF INDEXES OF EFFORTS OF STATES BASED ON CHISM AND NEWCOMER DATA 1929-30



Read chart thus: In 1929-30 the index of effort for Alabama based on Chism's data was 112.9. (See Table 9.) In the same year Alabama's index of effort based on Newcomer's data was 160.9. (See Table 13.) The bars for Alabama represent these two index numbers. Similarly read chart for other states.

states to support education according to these two sets of data, inasmuch as the expenditure figure used is precisely the same in both cases. The differences between the studies as to types of taxes used and their relative weighting as presented in Table 5 are doubtless largely responsible for the differences found both as to ability and effort on the basis of the two studies.

Summary

This chapter has presented the efforts of the states to support public education using two sets of data as to the relative tax resources of the states.

On the basis of Chism's data the average of the mean percents³ of tax resources expended by the states for education for the six years of study was 29.8 with an average standard deviation of 5.9. The average of the percents³ for the six years was 28.5 for the United States

as a whole. The average ratio between the extremes of percent of relative tax resources expended by the states for education was 2.19 to 1.

On the basis of Newcomer's data, the mean percent of tax resources expended by the states for education in 1920 was 27.0 with a standard deviation of 8.7. In 1930 the mean percent was 45.9 with a standard deviation of 14.2. The ratio between the extremes of percent of relative tax resources expended for education was 15 to 1 in 1920 and 21.5 to 1 in 1930.

It should be borne in mind that percents of relative tax resources expended by the states for education, as calculated on the basis of the Chism and Newcomer data, cannot be compared directly because of the difference in the total estimated tax resources for the United States in the two studies.

³ See footnotes to Table 11 for explanation of difference between mean percent and the percent for the United States.

CHAPTER V

The Adequacy of Financial Support Provided Education in the States

The formula and basic data for measuring the efforts of the states to support education were presented in Chapter III. In Table 15 the expenditure per thousand units of educational need is presented for each year of the study. Index numbers for these data are presented in Table 16, showing the relation of the expenditure per thousand units of educational need of each state for each year of the study to the United States as a whole. Table 17 consists of another set of index numbers showing the trend in expenditures for current costs per thousand units of educational need of each state over the period of the study in terms of its expenditure in 1919-20.

The average annual expenditure per thousand units of educational need as presented in column 9 of Table 15 is shown graphically in Figure IV.

Table 18 presents the rank of the states on expenditures per thousand units of need. For the combined biennial periods 1920 to 1932, New Jersey ranked first, expending an average of approximately \$80 per unit of educational need. The next highest was New York, followed by Nevada, California, Michigan, Massachusetts, Wyoming, Connecticut, Arizona, Montana, New Hampshire, and Rhode Island, forming the upper quarter of the states. Georgia ranked lowest for the entire period, expending an average of approximately \$19 per unit of educational need. The next lowest was Arkansas, preceded by Mississippi, Alabama, South Carolina, Tennessee, North Carolina, Kentucky, Virginia, Texas, Louisiana, and Florida comprising in ascending order the lower quarter of the states.

Table 19 shows certain characteristics of the expenditures per thousand units of educational need for each year of the study. This table indicates that the range in expenditures increased somewhat during the period of the present study. Both the expenditure of the United States as a whole and the mean expenditure of the states increased each year thru 1929-30 and then decreased as a result of the economic situation. In 1919-20, \$5.50 was spent per unit of educational need in the state of highest expenditure level to \$1 in the state of lowest expenditure level. The average ratio for the seven years combined was \$4.70 to \$1.

Adequacy Indexes Relative Only

It should be emphasized that the adequacy indexes presented in Table 16 are relative only. "Adequacy" expressed in terms of the national average, or any other point in the entire range, does not represent absolute "adequacy" of financial support of schools. If this were the case, the states spending in excess of the national average would be spending more than necessary. The average, or any other point on the scale, simply provides a convenient point of reference for making comparisons. It is doubtful if any state is spending as much as it could profitably spend on education but this is a moot question which cannot be settled objectively. Each state must determine its expenditures for education in terms not only of its educational needs, but also in proper relationship to other governmental needs as nearly as such relationship can be determined.

Table F in Appendix V shows how the exclusion of revenue from permanent funds and school lands would have affected the relative adequacy of financial support accorded education in the states.

Comparison of Financial Adequacy with Other Measures of Adequacy

Adequacy of financial support in the several states based on the level of expenditure was compared with adequacy based upon certain other objective factors indicative of the efficiency of a state school system.

One of the criteria chosen for this purpose was Phillips' ranking of the states on the following ten factors:

1. Percent of school population attending school daily
2. Average number of days schools were kept open
3. Average number of days attended by each child enrolled
4. Percent of total enrolment found in high school
5. Ratio of students preparing to teach to teaching positions
6. Average expenditure per child of school age
7. Expenditure per pupil for purposes other than salaries
8. Average salaries of teachers, principals, and supervisors
9. Percent of literates ten years of age and over

10. Percent of high-school graduates continuing education.

Phillips has published the ranking of the states on these ten items combined for the

years 1922, 1924, 1928, and 1930, four of the years covered by the present study. Using the rank-difference method of correlation between Phillips' ranking for each of these four years

TABLE 15.—EXPENDITURE FOR CURRENT EXPENSES PER THOUSAND UNITS OF EDUCATIONAL NEED BY YEARS

State	1919-20	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32	Average	Index Col. 9 U. S.=100
1	2	3	4	5	6	7	8	9	10
Continental U. S.	\$37,803	\$46,807	\$49,426	\$52,815	\$56,347	\$58,467	\$54,061	\$50,818	100.0
Alabama.....	15,491	17,554	20,221	22,950	24,688	26,801	22,284	21,427	42.2
Arizona.....	64,320	61,857	68,571	63,716	62,904	64,930	58,841	63,591	125.1
Arkansas.....	13,141	15,057	17,632	21,755	22,758	23,674	19,704	19,103	37.6
California.....	51,877	66,588	66,713	77,430	84,982	85,676	81,632	73,557	144.7
Colorado.....	41,730	54,643	58,721	62,650	65,759	65,188	59,079	58,253	114.6
Connecticut.....	50,080	58,318	64,068	65,394	72,273	73,813	73,428	65,339	128.6
Delaware.....	40,865	56,512	57,244	61,957	58,880	66,750	68,947	58,736	115.6
Florida.....	25,875	32,109	31,369	40,345	52,429	36,753	34,114	36,142	71.1
Georgia.....	12,884	15,717	17,528	21,223	21,639	22,728	21,336	19,008	37.4
Idaho.....	47,221	52,154	51,266	49,346	51,484	52,280	45,766	49,931	98.3
Illinois.....	43,797	53,643	58,539	63,769	65,322	68,943	63,273	59,612	117.3
Indiana.....	44,346	69,756	55,319	54,260	63,048	61,446	52,434	57,230	112.6
Iowa.....	51,248	51,271	59,526	67,812	60,110	59,654	52,707	57,483	113.1
Kansas.....	43,242	48,479	46,994	49,823	60,531	52,875	43,629	49,368	97.1
Kentucky.....	15,378	21,466	25,287	29,578	30,587	32,644	28,895	26,262	51.7
Louisiana.....	26,294	32,377	32,929	35,248	36,097	34,800	32,078	32,832	64.6
Maine.....	36,222	42,983	44,503	46,646	49,345	48,235	46,277	44,887	88.3
Maryland.....	32,744	44,154	47,827	48,977	53,263	56,521	54,223	48,244	94.9
Massachusetts.....	54,428	65,997	70,152	67,924	77,752	78,133	73,043	69,633	137.0
Michigan.....	52,146	65,425	67,736	77,162	78,807	80,386	67,564	69,889	137.5
Minnesota.....	47,558	57,301	65,122	61,942	63,819	64,582	60,078	60,057	118.2
Mississippi.....	12,419	16,199	16,146	20,218	26,519	25,790	25,990	20,469	40.3
Missouri.....	29,176	37,537	39,980	43,662	43,802	44,685	44,241	40,440	79.6
Montana.....	65,430	66,866	59,710	62,389	63,576	63,845	55,905	62,532	123.1
Nebraska.....	45,640	57,200	46,123	47,677	49,130	51,556	44,043	48,838	96.1
Nevada.....	65,000	77,350	80,952	83,182	77,577	79,654	78,750	77,495	152.5
New Hampshire.....	50,333	57,785	62,988	65,046	66,000	66,215	65,888	62,036	122.1
New Jersey.....	54,442	69,355	76,337	82,179	89,114	95,156	94,026	80,087	157.6
New Mexico.....	34,979	43,138	38,898	40,412	45,461	44,901	41,483	41,325	81.3
New York.....	50,145	71,373	76,025	77,677	88,636	94,826	94,456	79,020	155.5
North Carolina.....	15,720	22,307	26,210	29,547	30,048	30,619	24,510	25,566	50.3
North Dakota.....	49,404	46,760	56,117	50,114	54,344	54,720	45,423	50,983	100.3
Ohio.....	48,589	58,366	56,748	59,589	65,106	65,599	56,784	58,683	115.5
Oklahoma.....	33,314	35,995	38,830	35,916	34,872	42,264	35,250	36,634	72.1
Oregon.....	34,798	48,971	48,945	51,934	54,768	59,381	43,308	48,872	96.2
Pennsylvania.....	40,218	48,375	56,413	61,256	63,061	64,958	62,111	56,627	111.4
Rhode Island.....	46,253	54,991	58,051	61,089	66,824	71,759	70,966	61,419	120.9
South Carolina.....	11,984	16,638	22,076	25,081	27,004	28,624	20,938	21,764	42.8
South Dakota.....	50,224	49,300	49,447	50,012	51,701	52,484	49,163	50,333	99.0
Tennessee.....	13,748	19,371	22,783	27,175	28,139	30,154	27,473	24,120	47.5
Texas.....	22,629	28,252	25,493	29,799	28,627	32,533	33,919	28,750	56.6
Utah.....	41,824	45,618	45,175	44,416	47,286	48,282	40,581	44,740	88.0
Vermont.....	48,892	49,976	47,140	52,667	52,655	56,368	50,420	51,160	100.7
Virginia.....	21,167	28,066	28,183	28,472	29,956	30,935	28,699	27,925	55.0
Washington.....	57,916	60,019	59,029	59,357	60,830	62,411	56,558	59,446	117.0
West Virginia.....	29,825	41,892	45,365	51,563	49,856	52,624	45,717	45,263	89.1
Wisconsin.....	42,146	52,692	53,699	51,708	55,154	62,699	54,741	53,263	104.8
Wyoming.....	56,655	64,258	70,943	72,575	82,176	73,250	64,494	69,193	136.2

Read table thus: In 1919-20 Alabama expended \$15,491 per thousand units of educational need. The data from which this figure is derived are taken from Table 3 which shows that Alabama in 1919-20 spent 7,730 thousands of dollars for education and from Table 6 which shows that Alabama in the same year had 499 thousand units of educational need. Dividing the former figure by the latter gives the \$15,491 figure for Alabama in 1919-20. Similarly read data for other states and years.

and the rank of the states for the same years on the level of expenditure per unit of educational need as calculated in this study, the coefficients are as follows:

$$1922: r = .85 \pm .03$$

$$1924: r = .79 \pm .04$$

$$1928: r = .81 \pm .03$$

$$1930: r = .83 \pm .03$$

TABLE 16.—INDEXES OF EXPENDITURE PER THOUSAND UNITS OF EDUCATIONAL NEED BY YEARS

State	United States=100							For total period
	1919-20	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32	
1	2	3	4	5	6	7	8	9
Continental U. S.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Alabama.....	41.0	37.5	40.9	43.5	43.8	45.8	41.2	42.2
Arizona.....	170.1	132.2	138.7	120.6	111.6	111.1	108.8	125.1
Arkansas.....	34.8	32.2	35.7	41.2	40.4	40.5	36.4	37.6
California.....	137.2	142.3	135.0	146.6	150.8	146.5	151.0	144.7
Colorado.....	110.4	116.7	118.8	118.6	116.7	111.5	109.3	114.6
Connecticut.....	132.5	124.6	129.6	123.8	128.3	126.2	135.8	128.6
Delaware.....	108.1	120.7	115.8	117.3	104.5	114.2	127.5	115.6
Florida.....	68.4	68.6	63.5	76.4	93.0	62.9	63.1	71.1
Georgia.....	34.1	33.6	35.5	40.2	38.4	38.9	39.5	37.4
Idaho.....	124.9	111.4	103.7	93.4	91.4	89.4	84.7	98.3
Illinois.....	115.9	114.6	118.4	120.7	115.9	117.9	117.0	117.3
Indiana.....	117.3	149.0	111.9	102.7	111.9	105.1	97.0	112.6
Iowa.....	135.6	109.5	120.4	128.4	106.7	102.0	97.5	113.1
Kansas.....	114.4	103.6	95.1	94.3	107.4	90.4	80.7	97.1
Kentucky.....	40.7	45.9	51.2	56.0	54.3	55.8	53.4	51.7
Louisiana.....	69.6	69.2	66.6	66.7	64.1	59.5	59.3	64.6
Maine.....	95.8	91.8	90.0	88.3	87.6	82.5	85.6	88.3
Maryland.....	86.6	94.3	96.8	92.7	94.5	96.7	100.3	94.9
Massachusetts.....	144.0	141.0	141.9	128.6	138.0	133.6	135.1	137.0
Michigan.....	137.9	139.8	137.0	146.1	139.9	137.5	125.0	137.5
Minnesota.....	125.8	122.4	131.8	117.3	113.3	110.5	111.1	118.2
Mississippi.....	32.9	34.6	32.7	38.3	47.1	44.1	48.1	40.3
Missouri.....	77.2	80.2	80.9	82.7	77.7	76.4	81.8	79.6
Montana.....	173.1	142.9	120.8	118.1	112.8	109.2	103.4	123.1
Nebraska.....	120.7	122.2	93.3	90.3	87.2	88.2	81.5	96.1
Nevada.....	171.9	165.3	163.8	157.5	137.7	136.2	145.7	152.5
New Hampshire.....	133.1	123.5	127.4	123.2	117.1	113.3	121.9	122.1
New Jersey.....	144.0	148.2	154.4	155.6	158.2	162.8	173.9	157.6
New Mexico.....	92.5	92.2	78.7	76.5	80.7	76.8	76.7	81.3
New York.....	132.6	152.5	153.8	147.1	157.3	162.2	174.7	155.5
North Carolina.....	41.6	47.7	53.0	55.9	53.3	52.4	45.3	50.3
North Dakota.....	130.7	99.9	113.5	94.9	96.4	93.6	84.0	100.3
Ohio.....	128.5	124.7	114.8	112.8	115.5	112.2	105.0	115.5
Oklahoma.....	88.1	76.9	78.6	68.0	61.9	72.3	65.2	72.1
Oregon.....	92.1	104.6	99.0	98.3	97.2	101.6	80.1	96.2
Pennsylvania.....	106.4	103.3	114.1	116.0	111.9	111.1	114.9	111.4
Rhode Island.....	122.4	117.5	117.5	115.7	118.6	122.7	131.3	120.9
South Carolina.....	31.7	35.5	44.7	47.5	47.9	49.0	38.7	42.8
South Dakota.....	132.9	105.3	100.0	94.7	91.8	89.8	90.9	99.0
Tennessee.....	36.4	41.4	46.1	51.5	49.9	51.6	50.8	47.5
Texas.....	59.9	60.4	51.6	56.4	50.8	55.6	62.7	56.6
Utah.....	110.6	97.5	91.4	84.1	83.9	82.6	75.1	88.0
Vermont.....	129.3	106.8	95.4	99.7	93.4	96.4	93.3	100.7
Virginia.....	56.0	60.0	57.0	53.9	53.2	52.9	53.1	55.0
Washington.....	153.0	128.2	119.4	112.4	108.0	106.7	104.6	117.0
West Virginia.....	78.9	89.5	91.8	97.6	88.5	90.0	84.6	89.1
Wisconsin.....	111.5	112.6	108.6	97.9	97.9	107.2	101.3	104.8
Wyoming.....	149.9	137.3	143.5	137.4	145.8	125.3	119.3	136.2

Read table thus: This table is based on the data presented in Table 15, which show that in 1919-20 the United States as a whole expended \$37,803 per thousand units of educational need while Alabama expended \$15,491 per thousand units of educational need. Taking the United States figure as 100, the figure for Alabama yields an index number of 41.0, i.e., it is 41 percent as great as the United States figure. Similarly read data for other states and years.

Since three of the items in Phillips' list of ten were financial in character, and since a high correlation would be expected between each of them and the financial measure of adequacy utilized in this study, these three items were excluded and the correlation again computed. The coefficient, using only the seven non-finan-

cial items in Phillips' list, is $.62 \pm .06$ for 1930, the only year for which Phillips published his data on each of the separate items.

Another check made was a comparison of the rank of the states according to expenditure level and a ranking of the states on certain non-financial factors related to state school

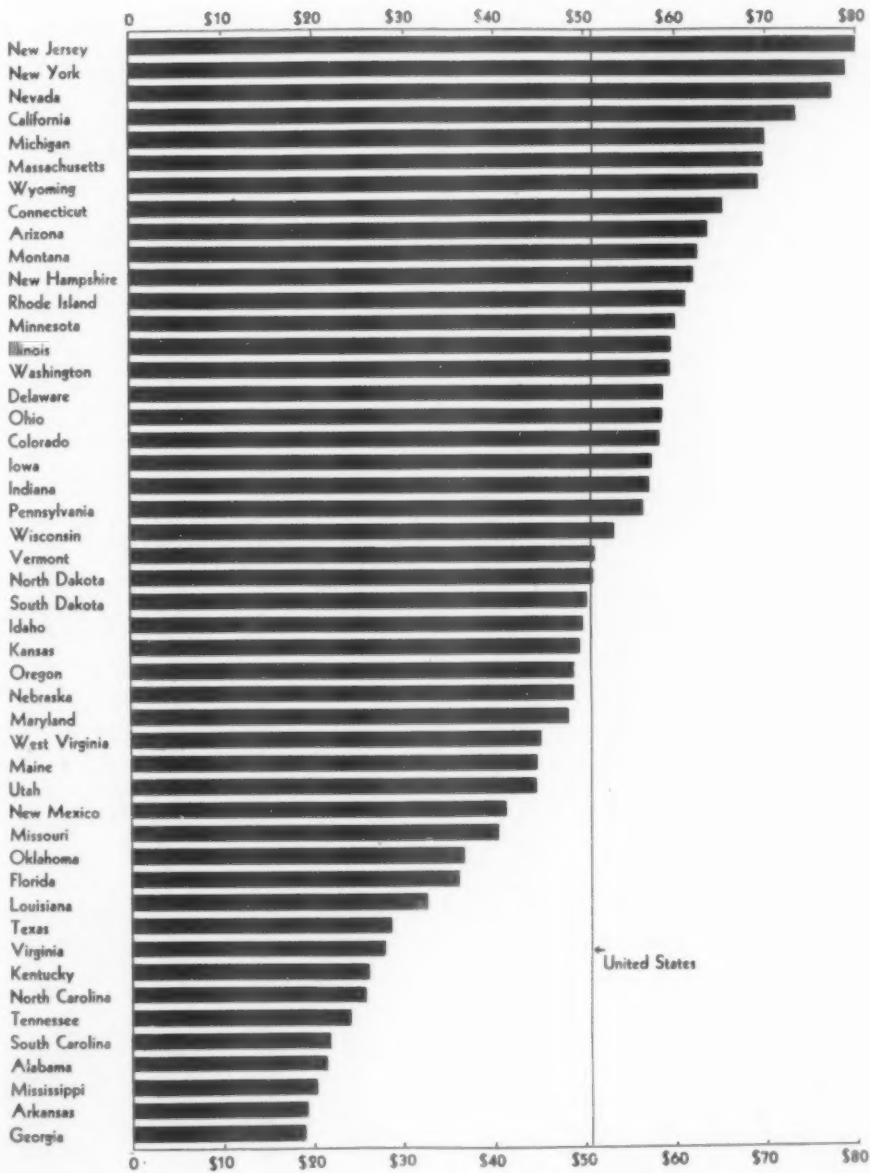
TABLE 17.—INDEX OF NUMBER OF DOLLARS EXPENDED PER THOUSAND UNITS OF EDUCATIONAL NEED
1919-20 = 100

State	1919-20	1921-22	1923-24	1925-26	1927-28	1929-30	1931-32
1	2	3	4	5	6	7	8
Continental U. S.	100	123.8	130.7	139.7	149.1	154.7	143.0
Alabama	100	113.3	130.5	148.2	159.4	173.0	143.9
Arizona	100	96.2	106.6	99.1	97.8	100.9	91.5
Arkansas	100	114.6	134.2	165.6	173.2	180.2	149.9
California	100	128.4	128.6	149.3	163.8	165.2	157.4
Colorado	100	130.9	140.7	150.1	157.6	156.2	141.6
Connecticut	100	116.4	127.9	130.6	144.3	147.4	146.6
Delaware	100	138.3	140.1	151.6	144.1	163.3	168.7
Florida	100	124.1	121.2	155.9	202.6	142.0	131.8
Georgia	100	122.0	136.0	164.7	168.0	176.4	165.6
Idaho	100	110.4	108.6	104.5	109.0	110.7	96.9
Illinois	100	122.5	133.7	145.6	149.1	157.4	144.5
Indiana	100	157.3	124.7	122.4	142.2	138.6	118.2
Iowa	100	100.0	116.2	132.3	117.3	116.4	102.8
Kansas	100	112.1	108.7	115.2	140.0	122.3	100.9
Kentucky	100	139.6	164.4	192.3	198.9	212.3	187.9
Louisiana	100	123.1	125.2	134.1	137.3	132.3	122.0
Maine	100	118.7	122.9	128.8	136.2	133.2	127.8
Maryland	100	134.8	146.1	149.6	162.7	172.6	165.6
Massachusetts	100	121.3	128.9	124.8	142.9	143.6	134.2
Michigan	100	125.5	129.9	148.0	151.1	154.2	129.6
Minnesota	100	120.5	136.9	130.2	134.2	135.8	126.3
Mississippi	100	130.4	130.0	162.8	213.5	207.7	209.1
Missouri	100	128.7	137.0	149.7	150.1	153.2	151.6
Montana	100	102.2	91.3	95.4	97.2	97.6	85.4
Nebraska	100	125.3	101.1	104.5	107.6	113.0	96.5
Nevada	100	119.0	124.5	128.0	119.3	122.5	121.2
New Hampshire	100	114.8	125.1	129.2	131.1	131.6	130.9
New Jersey	100	127.4	140.2	150.9	163.7	174.8	172.7
New Mexico	100	123.3	111.2	115.5	130.0	128.4	118.6
New York	100	142.3	151.6	154.9	176.8	189.1	188.4
North Carolina	100	141.9	166.7	188.0	191.1	194.8	155.9
North Dakota	100	94.6	113.6	101.4	110.0	110.8	91.9
Ohio	100	120.1	116.8	122.6	134.0	135.0	116.9
Oklahoma	100	108.0	116.6	107.8	104.7	126.9	105.8
Oregon	100	140.7	140.7	149.2	157.4	170.6	124.5
Pennsylvania	100	120.3	140.3	152.3	156.8	161.5	154.4
Rhode Island	100	118.9	125.5	132.1	144.5	155.1	153.4
South Carolina	100	138.8	184.2	209.3	225.3	238.9	174.7
South Dakota	100	98.2	98.5	99.6	102.9	104.5	97.9
Tennessee	100	140.9	165.7	197.7	204.7	219.3	199.8
Texas	100	124.8	112.7	131.7	126.5	143.8	149.9
Utah	100	109.1	108.0	106.2	113.1	115.4	97.0
Vermont	100	102.2	96.4	107.7	107.7	115.3	103.1
Virginia	100	132.6	133.1	134.5	141.5	146.1	135.6
Washington	100	103.6	101.9	102.5	105.0	107.8	97.7
West Virginia	100	140.5	152.1	172.9	167.2	176.4	153.3
Wisconsin	100	125.0	127.4	122.7	130.9	148.8	129.9
Wyoming	100	113.4	125.2	128.1	145.0	129.3	113.8

Read table thus: In 1919-20 Alabama expended \$15,491 per thousand units of educational need as shown in Table 15. This figure was given the value of 100 as shown in Column 2. In 1921-22 Alabama expended \$17,554 per thousand units of educational need. In terms of the 1919-20 figure this yields an index number of 113.3 as shown in Column 3. Similarly read data for other states and years.

FIGURE IV

AVERAGE EXPENDITURE PER UNIT OF EDUCATIONAL NEED 1920-32



Research Division, National Education Association

Read chart thus: The average expenditure per 1000 units of educational need in New Jersey for the alternate years 1919-20 to 1931-32 inclusive was \$80.087, as shown in Table 15, Column 9, or slightly more than \$80 per unit of need. Similarly read chart for other states.

efficiency by the Research Division of the National Education Association for the year 1930.¹ These items and the rank-order correlation coefficients were:

Relative amount of school attendance $r = .80 \pm .04$
 The holding power of the schools... $r = .47 \pm .08$
 Percent of literacy... $r = .68 \pm .05$

Combining the ranks of the three above items and correlating with the financial meas-

¹ National Education Association, Research Division, *Estimating State School Efficiency* 3: 77-131; May, 1932. Washington, D. C.: the Association.

TABLE 18.—RANK OF THE STATES IN ACCORDANCE WITH CURRENT EXPENDITURES PER THOUSAND UNITS OF EDUCATIONAL NEED, 1920-32

State	Rank							Rank for entire period	Gain or loss in rank 1920-32
	1920	1922	1924	1926	1928	1930	1932		
1	2	3	4	5	6	7	8	9	10
Alabama.....	42	44	45	45	46	45	45	45	- 3
Arizona.....	3	10	6	12	18	16	16	9	-13
Arkansas.....	45	48	46	46	47	47	48	47	- 3
California.....	9	6	8	4	3	3	3	4	6
Colorado.....	27	19	15	13	11	14	15	18	12
Connecticut.....	14	13	10	9	8	7	5	8	9
Delaware.....	28	17	18	15	22	11	8	16	20
Florida.....	38	38	38	36	28	37	37	37	1
Georgia.....	46	47	47	47	48	48	46	48	0
Idaho.....	19	22	24	29	30	30	27	26	- 8
Illinois.....	23	20	16	11	12	10	12	14	11
Indiana.....	22	3	22	21	17	21	23	20	- 1
Iowa.....	10	23	13	8	21	22	22	19	-12
Kansas.....	24	27	29	28	20	27	32	27	- 8
Kentucky.....	43	42	42	40	39	39	40	41	3
Louisiana.....	37	37	37	38	37	38	39	38	- 2
Maine.....	30	33	33	32	32	33	26	32	4
Maryland.....	34	31	27	30	26	24	21	30	13
Massachusetts.....	7	7	5	7	6	6	6	6	1
Michigan.....	8	8	7	5	5	4	9	5	- 1
Minnesota.....	18	15	9	16	14	17	14	13	4
Mississippi.....	47	46	48	48	45	46	43	46	4
Missouri.....	36	35	34	34	36	35	30	35	6
Montana.....	1	5	12	14	15	18	19	10	-18
Nebraska.....	21	16	30	31	33	31	31	29	-10
Nevada.....	2	1	1	1	7	5	4	3	- 2
New Hampshire.....	11	14	11	10	10	12	10	11	1
New Jersey.....	6	4	2	2	1	1	2	1	4
New Mexico.....	31	32	35	35	35	34	34	34	- 3
New York.....	13	2	3	3	2	2	1	2	12
North Carolina.....	41	41	40	41	40	42	44	42	- 3
North Dakota.....	15	29	21	26	25	26	29	24	-14
Ohio.....	17	12	19	19	13	13	17	17	0
Oklahoma.....	33	36	36	37	38	36	36	36	- 3
Oregon.....	32	26	26	23	24	23	33	28	- 1
Pennsylvania.....	29	28	20	17	16	15	13	21	16
Rhode Island.....	20	18	17	18	9	9	7	12	13
South Carolina.....	48	45	44	44	44	44	47	44	1
South Dakota.....	12	25	25	27	29	29	25	25	-13
Tennessee.....	44	43	43	43	43	43	42	43	2
Texas.....	39	39	41	39	42	40	38	39	1
Utah.....	26	30	32	33	34	32	35	33	- 9
Vermont.....	16	24	28	22	27	25	24	23	- 8
Virginia.....	40	40	39	42	41	41	41	40	- 1
Washington.....	4	11	14	20	19	20	18	15	-14
West Virginia.....	35	34	31	25	31	28	28	31	7
Wisconsin.....	25	21	23	24	23	19	20	22	5
Wyoming.....	5	9	4	6	4	8	11	7	- 6

Read table thus: In 1920 forty-one states expended more money per thousand units of educational need than Alabama which thus ranked 42. For the entire period of years covered Alabama ranked 45 and lost 3 places in rank from 1920 to 1932. Similarly read table for other states and years.

TABLE 19.—CERTAIN CHARACTERISTICS OF THE EXPENDITURES OF THE STATES FOR CURRENT COSTS OF EDUCATION PER THOUSAND UNITS OF EDUCATIONAL NEED

Year	Highest state		Lowest state		Difference between highest and lowest expenditure figure	Ratio of highest expenditure to lowest	United States expenditure ^a	Mean expenditure of the states ^b	Standard deviation
	Name	Expenditure per 1000 units of need	Name	Expenditure per 1000 units of need					
1	2	3	4	5	6	7	8	9	10
1919-20	Montana	\$65,430	South Carolina	\$11,984	\$53,446	5.5	\$37,803	\$39,245	\$15,190
1921-22	Nevada	77,350	Arkansas	15,057	62,293	5.1	46,807	46,917	16,971
1923-24	Nevada	80,952	Mississippi	16,146	64,806	5.0	49,426	48,647	17,278
1925-26	Nevada	83,182	Mississippi	20,218	62,964	4.1	52,815	51,138	17,180
1927-28	New Jersey	89,114	Georgia	21,639	67,475	4.1	56,347	53,931	18,203
1929-30	New Jersey	95,156	Georgia	22,728	72,428	4.2	58,467	55,065	18,561
1931-32	New York	94,456	Arkansas	19,704	74,752	4.8	54,061	50,316	18,580

Read table thus: In 1919-20 Montana spent \$65,430 per thousand units of need whereas South Carolina spent only \$11,984. The difference between these two figures is \$53,446. The ratio of the larger figure to the smaller is 5.5 which means that the highest expenditure state spent \$5.50 per unit of educational need to \$1 in the lowest expenditure state. The expenditure for the United States was \$37,803 per thousand units of need while the mean for the 48 states was \$39,245. The standard deviation was \$15,190.

^a This figure is secured by dividing the total expenditures for current costs of education in the United States by the total number of units of educational need in the United States.

^b This figure is the average of the 48 figures derived by dividing the expenditures for current costs of education in each state by the number of units of educational need in each state, i.e., the expenditure figures for all of the states were added together and divided by 48.

ure utilized in this study yields a rank order coefficient of correlation of $.72 \pm .05$.

The preceding coefficients of correlation are of special significance because there is no error associated with population sampling since the total population is represented. While other sampling factors remain in the data upon which the correlations are based, the coefficients presented on the preceding pages are high enough to indicate a close relationship between adequacy of financial support and adequacy of educational program as determined by the use of certain objective non-financial factors.

Summary

The relative adequacy of the educational programs of the several states is measured in

this study by the number of dollars expended annually for the current cost of the public schools per unit of educational load.

The basic measure of the educational load of the states utilized was the number of units of educational need as calculated by the formula developed by Mort.

The states in which schools were accorded the most adequate financial support received from \$4 to \$5 per unit of educational need to \$1 received by the schools in the states being accorded the least adequate financial support.

Generally speaking, the relative adequacy of the educational programs of the states as measured by the level of financial support was much the same as the relative adequacy of the educational program determined in certain previous studies thru the use of non-financial measures.

CHAPTER VI

The Relation of Effort, Adequacy, and Ability

The purpose of this chapter is to show the relationship which exists among the factors "effort" as presented in Chapter IV, "adequacy" as presented in Chapter V, and "ability" as estimated by Chism and Newcomer whose basic data were presented in Chapter III.

Relation of Effort to Adequacy Using Chism's Data

Correlation coefficients¹ were calculated between the "efforts" of the states, expressing effort in terms of percent of tax resources devoted to education, and "adequacy" of financial support accorded education in the several states as measured by the current expense figure utilized in this study per 1000 units of educational need. The relationship is generally slightly positive as shown by the following coefficients of correlation for the six years of the study:

1921-22: $r =$	$.32 \pm .09$
1923-24: $r =$	$.19 \pm .09$
1925-26: $r =$	$.04 \pm .10$
1927-28: $r =$	$.08 \pm .10$
1929-30: $r =$	$-.02 \pm .10$
1931-32: $r =$	$.12 \pm .10$

For practical purposes, relationship between these factors is insignificant. Thus, among the states where the adequacy of financial support of the schools is high, there are states which put forth much effort to achieve a high level of financial support whereas other states are required to put forth but little effort to provide the same level of financial support. On the other hand, where the adequacy of financial support of the schools is low, there are states which nevertheless expend a large percent of their relative tax resources for education.

This means that if the Second Model Tax Plan had been in operation in all the states, and the states had supported education as they actually did, there would have been practically

no relationship between the two factors "effort" and "adequacy."²

Figure V shows graphically the relationship between the average "effort" based on Chism's data for the six biennial periods 1922 to 1932 and the average "adequacy" based on number of dollars expended per unit of educational need for the seven biennial periods 1920 to 1932.³

Relation of Effort to Adequacy Using Newcomer's Data

"Effort," as calculated on the basis of Newcomer's data, was also correlated with the "adequacy" of the support provided. For 1920 the correlation coefficient was $.43 \pm .08$. By 1930 the situation had so changed that the correlation coefficient was $-.37 \pm .08$, a decided shift from the relationship found for 1920. As shown by the probable errors, both of these correlations are significant especially in view of the fact that the total population was available for study. Figure VI presents graphically the relationship for 1930.

Whereas in 1920 there was a definite tendency for the states which put forth the greatest effort in support of education to provide the most adequate level of financial support for their schools, in 1930 there was a definite tendency for the states which put forth the greatest effort to be unable to provide as adequate a level of financial support for their schools as other states exerting less effort.

Correlation between "Effort" and "Adequacy" When Adequacy Is Calculated in Terms of Various Measures of Educational Load

The basic measure of the adequacy of the financial support accorded the schools in this study has been the expenditure per unit of educational need. It may also be measured in

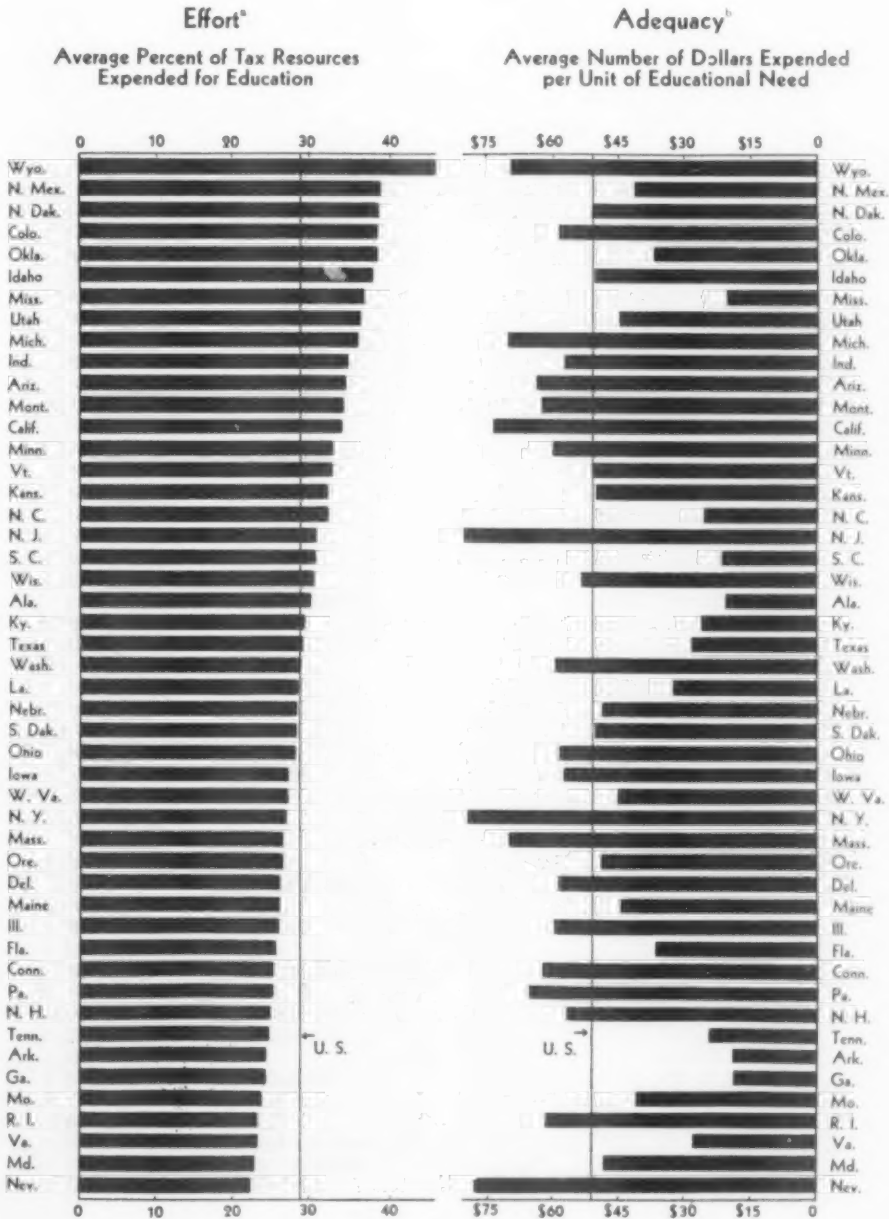
¹ All correlation coefficients in this chapter were worked by the Pearson product-moment method. The probable error of each coefficient was calculated, altho the problem of population sampling is not present since the total population of the states was available for study. The sampling factor still remains, however, in the data, particularly with reference to "ability" and thus "effort" since the latter is calculated in terms of "ability" data. Studies of ability other than those by Chism and Newcomer would doubtless be somewhat different in result so that the sampling factor exists here. It is present in the "adequacy" measure to a less extent because this factor is measured in terms of actual expenditures instead of estimates, sampling entering into the formula only for the measurement of educational need, and this is also based primarily upon the actual data of average daily attendance.

² Chapter VII shows the relative efforts that would have been required of the states to support a defensible national minimum program.

³ Seven years are included in this average since data for 1920 were needed for use in connection with Newcomer's data as to tax resources for 1920.

FIGURE V

AVERAGE "EFFORT" (1922-32) BASED ON CHISM'S DATA AND
AVERAGE "ADEQUACY" (1920-32) COMPARED



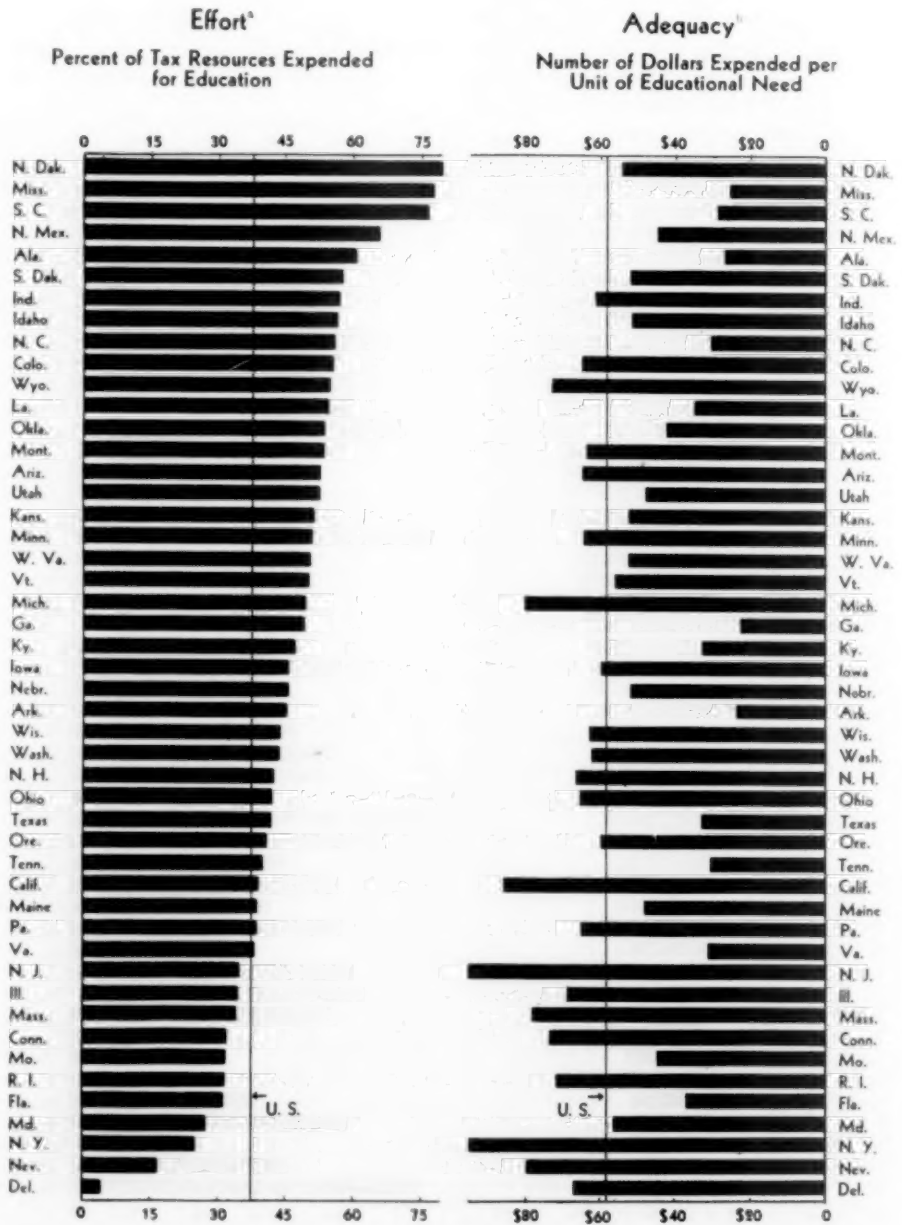
Research Division, National Education Association

^aBased on data from Table 8, Column 8.

^bBased on data from Table 15, Column 9.

FIGURE VI

"EFFORT" BASED ON NEWCOMER'S DATA AND "ADEQUACY"
COMPARED 1929-30



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^aBased on data from Table 13, Column 3.

^bBased on data from Table 15, Column 7.

terms of two other measures of educational load: (1) the expenditure per pupil in average daily attendance and (2) the expenditure per child five to seventeen years of age. Data on these two items are presented in Appendix IV. For comparative purposes, correlations were calculated for 1930 between "effort" based on both Chism's and Newcomer's data and "adequacy" based on the two measures mentioned above.

The correlation coefficients are given in Table 20 for the year 1929-30. The correlations, when Chism's data are used, are close to zero regardless of which measure of educational load is used. On the basis of Newcomer's data the correlations are all negative but somewhat lower when attendance and population are used as the measure of educational load instead of units of educational need. Regardless of which measure of educational load is used, essentially the same conclusion is reached as to the relationship between the factors "effort" and "adequacy."

Relation of Effort to Ability

The correlation between the efforts of the states to support education and their ability to support education was calculated to determine what relationship exists between these two factors.

The correlation between the efforts of the states to support education using Chism's data and the relative ability of the states to support education according to Chism's data for representative years yielded coefficients as follows:

$$\begin{aligned} 1924: r &= -.30 \pm .09 \\ 1928: r &= -.31 \pm .09 \\ 1930: r &= -.46 \pm .08 \\ 1932: r &= -.19 \pm .09 \end{aligned}$$

The correlation coefficient for the average of the two factors for the six years of the study based on Chism's data is $-.31 \pm .09$.

When effort, calculated on the basis of Newcomer's data, is correlated with the relative ability of the states to support education, using Newcomer's data as a measure of the relative ability of the states, the correlation coefficients are:

$$\begin{aligned} 1920: r &= -.28 \pm .09 \\ 1930: r &= -.77 \pm .04 \end{aligned}$$

The above correlation coefficients are evidence that states of great ability tended to put

TABLE 20.—COMPARISON OF CORRELATION BETWEEN THE TWO FACTORS "EFFORT" AND "ADEQUACY" FOR 1929-30 WHEN "ADEQUACY" IS CALCULATED IN TERMS OF VARIOUS MEASURES OF EDUCATIONAL LOAD

Source of tax resource data	Adequacy		
	Per unit of educational need	Per child in average daily attendance	Per child 5-17 years of age
1	2	3	4
Chism.....	-.02 $\pm$.10	.04 $\pm$.10	.11 $\pm$.10
Newcomer.....	-.37 $\pm$.08	-.29 $\pm$.09	-.23 $\pm$.09

forth less effort in support of education than less able states especially in 1930.

Relation of Ability to Adequacy

In order to determine to what extent the more able states tend to provide their schools with more adequate financial support, correlation coefficients were calculated between the factors "ability" and "adequacy." On the basis of Chism's data as to the tax resources of the states the coefficients for representative years are:

$$\begin{aligned} 1924: r &= .83 \pm .03 \\ 1928: r &= .79 \pm .04 \\ 1930: r &= .82 \pm .03 \\ 1932: r &= .82 \pm .03 \end{aligned}$$

The correlation for the average of the two factors for the combined six years of the study based on Chism's data resulted in a coefficient of $.82 \pm .03$.

When ability, represented by Newcomer's estimates of the tax resources of the states, is correlated with the relative adequacy of financial support of the schools the correlation coefficients are:

$$\begin{aligned} 1920: r &= .31 \pm .09 \\ 1930: r &= .68 \pm .05 \end{aligned}$$

The above evidence indicates that there is a rather high relationship between the two factors under consideration.

Graphic Presentation of "Effort," "Adequacy," and "Ability"

Figure VII consists of a map showing by groups the efforts of the states to support education in 1929-30 using Chism's data as to tax resources. Figure VIII is similar except that it is based on Newcomer's data as to tax resources. Figure IX shows by groups the

FIGURE VII

PERCENT OF TAX RESOURCES (CHISM) EXPENDED FOR EDUCATION
1929-30

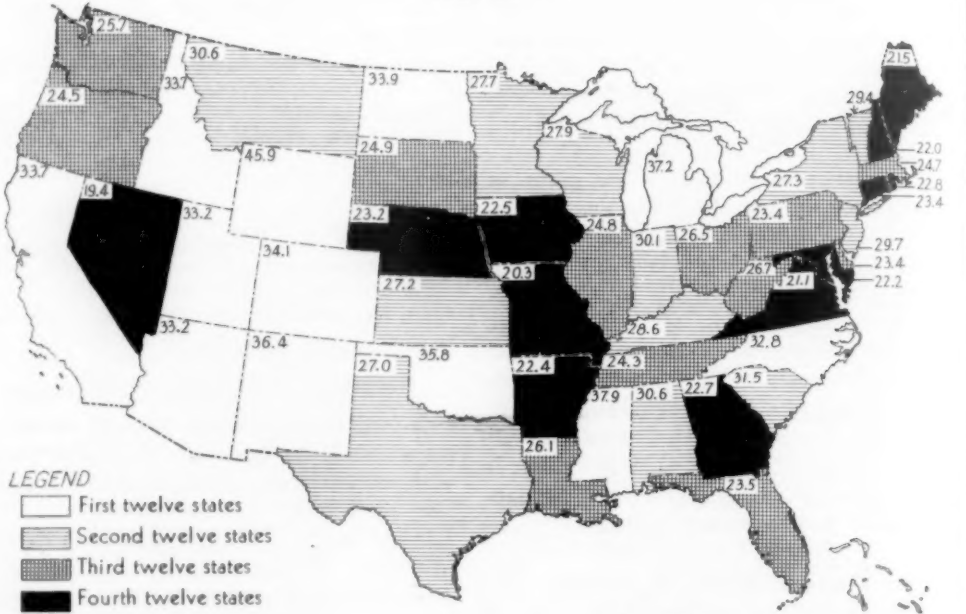


FIGURE VIII

PERCENT OF TAX RESOURCES (NEWCOMER) EXPENDED FOR
EDUCATION 1929-30

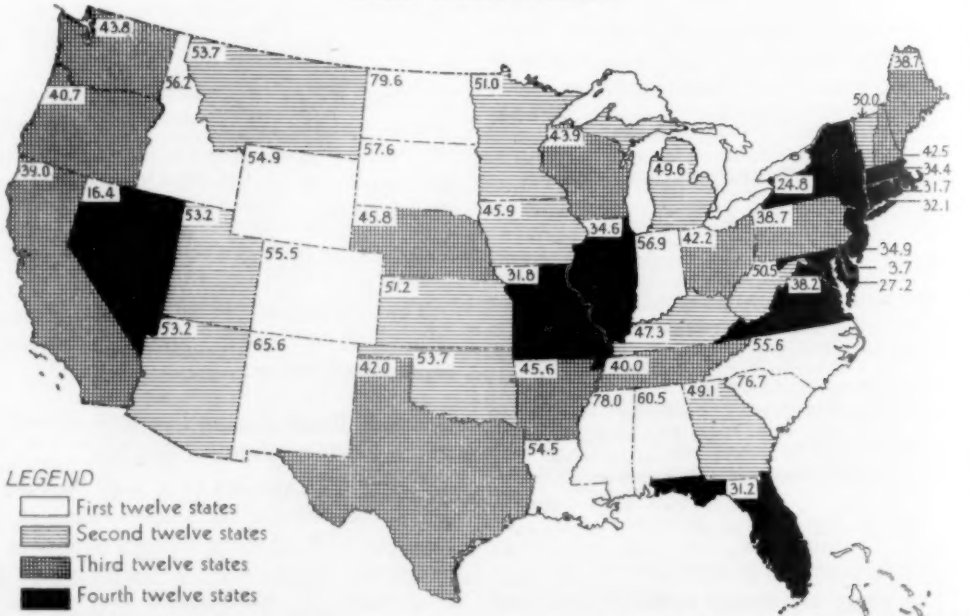
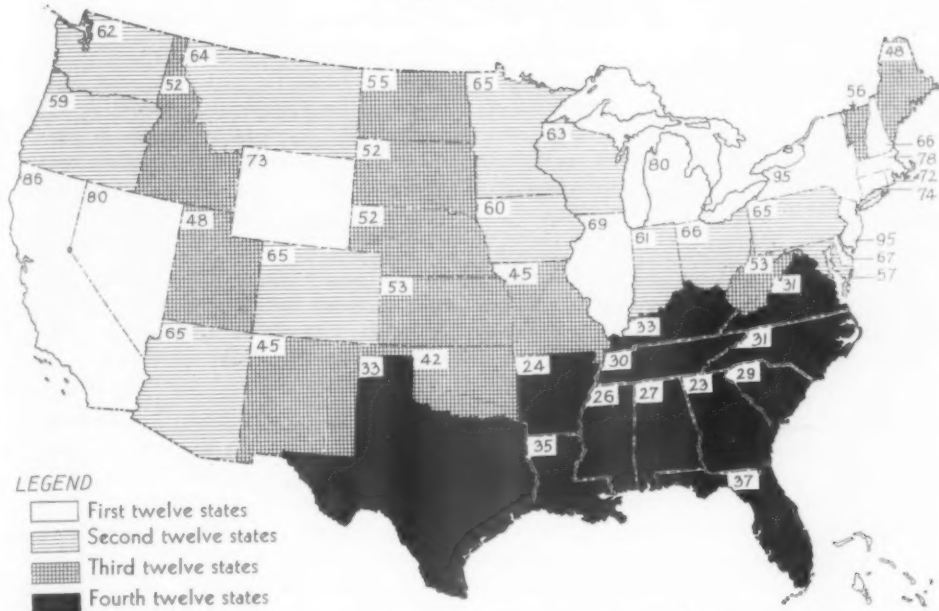


FIGURE IX

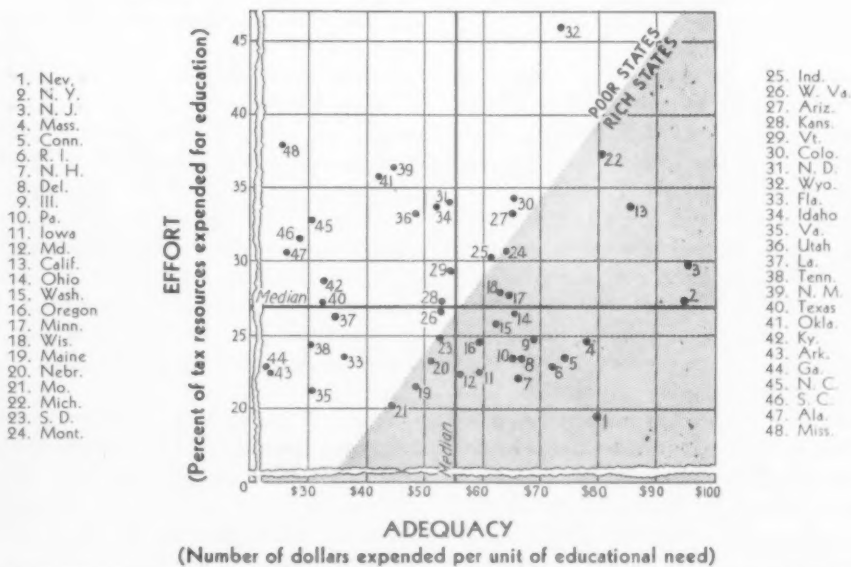
NUMBER OF DOLLARS EXPENDED PER UNIT OF EDUCATIONAL NEED 1929-30



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FIGURE X

RELATION OF EFFORT, ADEQUACY, AND ABILITY



Read chart thus: The numbers in the chart represent the states indicated in the above key and also represent the rank order ability of the states to support education according to Chism's data for 1930. Thus the figure "1" in the chart represents Nevada, and also means that Nevada ranked "1" on ability to support education according to Chism's data for 1929-30. Its plotting shows that Nevada devoted 19.4 percent of its tax resources to education in 1929-30 and expended \$79,654 per thousand units of educational need. Similarly interpret other numbers in the chart.

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adequacy of support provided education as measured by the number of dollars expended per unit of educational need.

Figure X also shows the relation of "effort," calculated on Chism's data, to "adequacy" for the year 1930. Each number represents the state listed by the corresponding number in the legend and is plotted according to its proper position with regard to the "effort" and "adequacy" factors. The number given each state is its rank on ability to support education according to Chism's data as to tax resources. In the following discussion the states ranking 1 to 24 will be termed rich, and those ranking 25 to 48, poor. It will be assumed that both high and low effort and adequacy are divided by the median lines.

The heavy horizontal and vertical lines are the medians of effort (percent of tax resources expended for education) and adequacy (number of dollars expended per unit of educational need), respectively. The shaded area divides the twenty-four states ranking highest on ability to support education from the twenty-four states ranking lowest. All of the states ranking 25 to 48 on ability to support education fall in the unshaded area when they are plotted on the "effort" and "adequacy" factors. All of the states ranking 1 to 24 on ability to support education fall in the shaded portion of the chart. This chart shows that 13 poor states put forth high effort but even then could provide their schools with only a low level of financial support. Seven poor states put forth relatively low effort and thus provided their schools with only a low level of financial support, as would be expected. Four rich states put forth little effort and as a result provided only inadequate support for their schools. Thirteen rich states, altho exerting relatively low effort, nevertheless were able to provide their schools with a high level of financial support. Seven rich states put forth relatively high effort and were thus able to provide their schools with a high level of financial support, four of them providing more adequate financial support than any other states. By exerting great effort four poor states were able to provide their schools with a relatively high level of financial support.

Figure X shows that there are over twice as many poor states putting forth greater than the median effort as there are rich states. On the other hand, about five times as many rich

states as poor states provide their schools with a level of financial support above the median. Generally speaking, the tendency is for the rich states to be able to provide their schools with more adequate financial support than the poor states and with less effort than the poor states exert.

The latter statement is qualified because of the fact that seven of the poor states put forth less effort than seven of the rich states. Assuming the validity of the measure of effort utilized, these poor states which put forth little effort are doubtless the type of state which the opponents of federal support have in mind when they assert that all the states could support an adequate program of education if they tried. It is well to point out, however, that as against the seven poor states exerting less than median effort there are seventeen rich states in the same classification. In these seven poor states, the following percents of tax resources would have been required in 1929-30 to support a defensible national minimum program of \$60 per unit of educational need which is only slightly higher than the national average: Georgia-60.0; Arkansas-56.9; Tennessee-48.3; Louisiana-45.0; Virginia-40.9; Florida-38.3; West Virginia-30.5.

The median percent of tax resources expended by the states for education in 1930 was approximately 27. Only one state, Wyoming, spent over 38 percent of its tax resources for education. The adequacy of support provided in West Virginia was almost as great as the median and only a slightly greater effort would have placed it above the median on this factor. In view of the fact that the average state devoted only 27.9 percent of its *relative tax resources* to education in 1929-30, none of the other six of these states could reasonably be expected to put forth as great a percent of their tax resources for education as would be required of them to support the defensible program.

Figure X with which the above discussion is concerned is based upon the efforts and ability of the states in terms of Chism's data. A similar chart prepared for any of the years for which Chism provides data would show essentially the same results.

A chart based on Newcomer's data for 1930 would similarly divide the rich and poor states and would show even more of the poor states putting forth greater effort with inadequate

financial support resulting and more rich states provided higher financial support at less effort.

Summary

From data presented, it appears that there is but little relationship between the two factors "effort" and "adequacy," there being only a slight positive relationship using Chism's data. Using Newcomer's data, the correlation coefficient declines from .43 in 1920 to —.37 in 1930.

Between "effort" and "ability" there is a significant but not high negative relationship on the basis of both sources of data on tax

resources, except that in 1930, on the basis of Newcomer's data, the correlation coefficient was —.77, a rather high negative correlation.

Between the average for the six years of the study of the factors, "ability" of the states according to Chism's data and the "adequacy" of expenditures for education, there is a rather high positive correlation of .82. Between "adequacy" and Newcomer's data as to "ability" the correlation was .31 in 1920 and .68 in 1930.

There is a tendency for the rich states to provide their schools with more adequate financial support, even tho they exert less effort to do so than the poor states.

CHAPTER VII

Efforts Required of the States To Support a Defensible National Minimum Program

As shown in Chapter V there was a wide range among the states in the amount of money expended per unit of educational need. This range was caused by the varying ability and the varying efforts of the states to support education. The purpose of this chapter is to show what results when either of these two factors is held constant.

The cost of a defensible national minimum expenditure per unit of educational need as calculated by Mort is \$60.¹ His procedure in arriving at this figure was to find the communities of average wealth in the United States. Then, in the thirty-three states for which data were collected in the National Survey of School Finance, he listed all communities that did not vary more than 10 percent from the average in wealth per unit of need. Next, he found how much these communities were expending per unit of educational need. The average figure of these communities was found to be \$60, or what may be termed a defensible national minimum expenditure per unit of educational need.²

Using Chism's Data

In Table 21 the states are arranged in order of the percent of relative tax resources required to meet the defensible national minimum program for the year 1930. Figure XI expresses similar data for 1932 in graphic form.

In 1930, 88.2 percent of Mississippi's relative tax resources would have been required to support such a program as contrasted with only 14.6 percent for Nevada. The ratio between Mississippi and Nevada would have been approximately 6 to 1.

Using Newcomer's Data

Table 22 ranks the states on the percent of tax resources, as calculated by Newcomer, that would have been required to support the defensible national minimum program in 1930. This relationship is shown graphically in Figure XII. Mississippi would have been re-

quired to put forth 55.1 times as much effort as Delaware. If Delaware is excluded, because it is an extreme case, the ratio is 15 to 1 between Mississippi and Nevada. The percent required for the United States as a whole is greater than on the basis of Chism's data due to the fact that the total tax resources of the nation as calculated by Newcomer were less than as calculated by Chism.

Adequacy at Various Levels of Effort

In this section the efforts of the states, as calculated on the basis of Chism's data, are held constant at various levels in order to show the relative adequacy of the support that could be provided with all the states exerting the same effort.

TABLE 21.—PERCENT OF TAX RESOURCES (CHISM) REQUIRED TO HAVE SUPPORTED A DEFENSIBLE NATIONAL MINIMUM PROGRAM OF \$60 PER UNIT OF EDUCATIONAL NEED IN 1930

State	Percent of tax resources required	State	Percent of tax resources required
1	2	3	4
Mississippi.....	88.2	Montana.....	28.8
Alabama.....	68.6	South Dakota....	28.5
South Carolina....	66.1	Michigan.....	27.8
North Carolina....	64.2	Missouri.....	27.3
Georgia.....	60.0	Nebraska.....	27.0
Arkansas.....	56.9	Maine.....	26.8
Kentucky.....	52.6	Wisconsin.....	26.7
Oklahoma.....	50.9	Minnesota.....	25.7
Texas.....	49.7	Oregon.....	24.8
New Mexico.....	48.6	Washington.....	24.7
Tennessee.....	48.3	Ohio.....	24.3
Louisiana.....	45.0	California.....	23.6
Utah.....	41.3	Maryland.....	23.5
Virginia.....	40.9	Iowa.....	22.6
Idaho.....	38.7	Illinois.....	21.6
Florida.....	38.3	Pennsylvania....	21.6
Wyoming.....	37.6	Delaware.....	21.1
North Dakota....	37.2	New Hampshire..	19.9
Colorado.....	31.4	Rhode Island....	19.1
Vermont.....	31.2	Connecticut.....	19.0
Kansas.....	30.8	Massachusetts..	19.0
Arizona.....	30.7	New Jersey.....	18.7
West Virginia....	30.5	New York.....	17.3
Indiana.....	29.4	Nevada.....	14.6
		Continental U. S.	27.8

¹ Mort, Paul R. *Federal Support for Public Education*. New York: Bureau of Publications, Teachers College, Columbia University, 1936. p. 207-17.

² Another possible method of arriving at a defensible national minimum expenditure per unit of need is to find the average expenditure per unit of educational need of the states of average tax resources per unit of educational need. This procedure yields a slightly lower figure than Mort's, i.e., \$58 per unit of educational need.

TABLE 22.—PERCENT OF TAX RESOURCES (NEWCOMER) REQUIRED TO HAVE SUPPORTED A DEFENSIBLE NATIONAL MINIMUM PROGRAM OF \$60 PER UNIT OF EDUCATIONAL NEED IN 1930

State	Percent of tax resources required	State	Percent of tax resources required
1	2	3	4
Mississippi.....	181.8	Montana.....	50.3
South Carolina...	160.3	Arizona.....	49.2
Alabama.....	135.7	Maine.....	48.4
Georgia.....	129.9	Minnesota.....	47.5
Arkansas.....	116.0	Iowa.....	46.2
North Carolina...	109.0	Wyoming.....	44.6
Louisiana.....	94.3	Missouri.....	42.7
North Dakota....	87.4	Washington....	42.0
New Mexico.....	87.3	Wisconsin.....	42.0
Kentucky.....	86.9	Oregon.....	41.2
Tennessee.....	79.2	Ohio.....	38.6
Texas.....	77.2	New Hampshire..	38.2
Oklahoma.....	76.1	Michigan.....	37.0
Virginia.....	74.1	Pennsylvania...	35.8
Utah.....	66.0	Illinois.....	30.1
South Dakota....	66.0	Maryland.....	28.8
Idaho.....	64.3	California.....	27.3
Kansas.....	58.2	Rhode Island...	26.6
West Virginia...	57.6	Massachusetts..	26.4
Indiana.....	55.6	Connecticut....	26.1
Nebraska.....	53.4	New Jersey.....	22.0
Vermont.....	53.3	New York.....	15.7
Colorado.....	51.2	Nevada.....	12.2
Florida.....	51.0	Delaware.....	3.3
Continental U. S. 38.6			

Table 23 shows the extent to which the defensible national minimum program in each state would have been met in 1932 if each state had put forth the same effort as would have been required of New York to maintain that program. With the same effort, sixteen states would have been unable to provide even 50 percent of the defensible national minimum program.

On the basis of Chism's data for the year 1930 many of the states would have been unable to meet the defensible national minimum program even if they had put forth as much effort as the states which ranked high on effort to support education. For example, sixteen states could not have met the defensible national minimum if their efforts had equaled the average effort of the six states ranking highest, or expended 37.9 percent of their tax resources for education:

Alabama	New Mexico
Arkansas	North Carolina
Florida	Oklahoma
Georgia	South Carolina
Idaho	Tennessee
Kentucky	Texas
Louisiana	Utah
Mississippi	Virginia

Many of the states, even with relatively great effort, would have been unable to provide sufficient funds to equal the national average expenditure per 1000 units of educational need in 1930 which was \$58,467. The average percent of tax resources expended for education in 1930, based on Chism's data, of the states which ranked 13 to 24 on this factor was 29.0 percent. With this effort the following states could not have provided their schools with the national average expenditure per unit of educational need for that year:

Alabama	North Carolina
Arizona*	North Dakota*
Arkansas	Oklahoma
Colorado*	South Carolina
Florida*	Tennessee
Georgia	Texas
Idaho*	Utah
Kansas*	Vermont*
Kentucky	Virginia
Louisiana	West Virginia*
Mississippi	Wyoming*
New Mexico	

Of this list only those marked with asterisks (*) could have met the national average in 1930 if they had put forth the same effort as

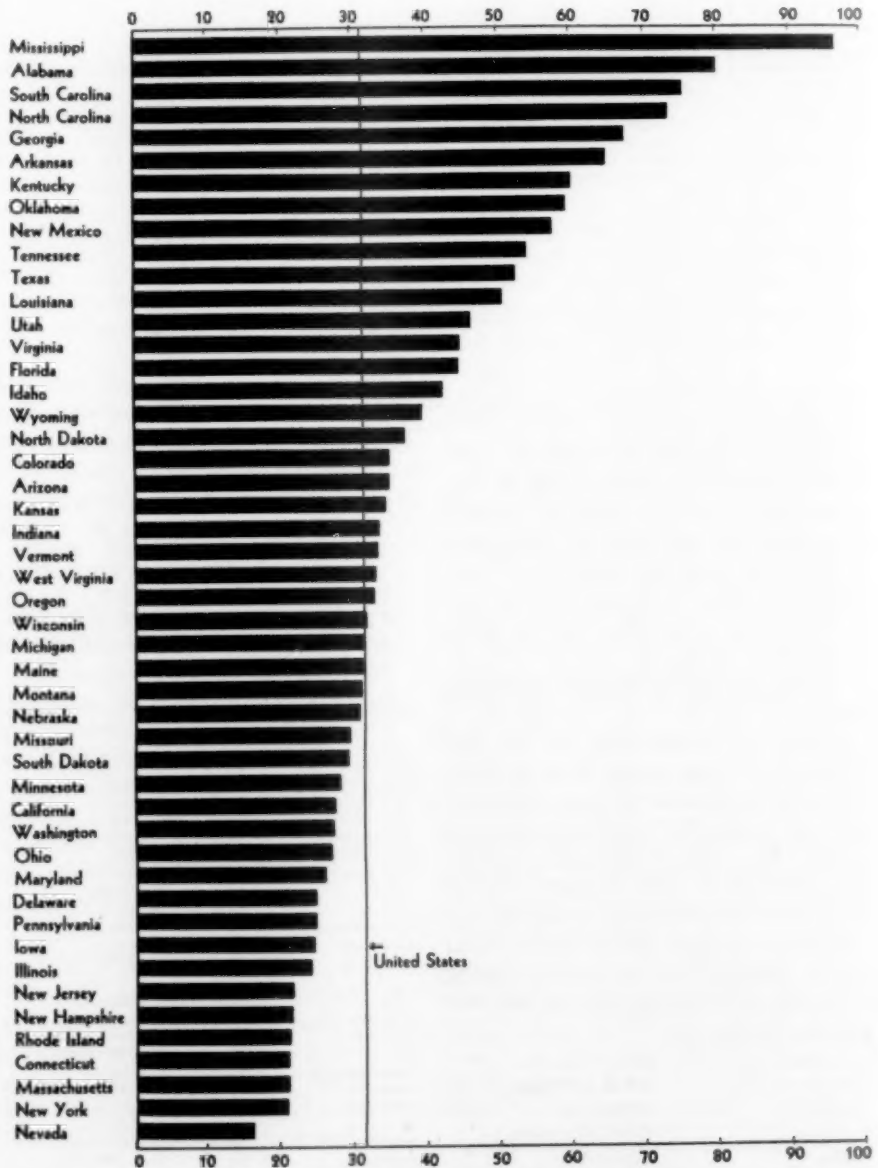
TABLE 23.—PERCENT OF DEFENSIBLE NATIONAL MINIMUM PROGRAM THAT WOULD HAVE BEEN PROVIDED IF EACH STATE HAD PUT FORTH THE EFFORT, BASED ON CHISM'S DATA, THAT WOULD HAVE BEEN REQUIRED OF NEW YORK IN 1932

State	Percent	State	Percent
Nevada.....	126.5	West Virginia...	62.9
New York.....	100.0	Vermont.....	62.6
Massachusetts..	99.2	Indiana.....	62.0
Connecticut....	99.0	Kansas.....	60.4
Rhode Island...	98.4	Colorado.....	59.7
New Hampshire..	97.5	Arizona.....	59.7
New Jersey.....	97.3	North Dakota...	56.0
Illinois.....	86.6	Wyoming.....	52.7
Iowa.....	86.0	Idaho.....	49.1
Pennsylvania...	84.4	Florida.....	46.9
Delaware.....	84.2	Virginia.....	46.8
Maryland.....	79.0	Utah.....	45.2
Ohio.....	77.5	Louisiana.....	41.3
Washington....	76.6	Texas.....	40.0
California.....	76.0	Tennessee....	38.8
Minnesota.....	74.6	New Mexico....	36.3
South Dakota....	71.3	Oklahoma.....	35.2
Missouri.....	70.6	Kentucky.....	34.7
Nebraska.....	67.7	Arkansas.....	32.2
Montana.....	66.9	Georgia.....	31.0
Maine.....	66.8	North Carolina..	28.4
Michigan.....	66.3	South Carolina..	27.6
Wisconsin.....	65.6	Alabama.....	26.0
Oregon.....	63.8	Mississippi....	21.7
Continental U. S. 66.3			

FIGURE XI

EFFORT, BASED ON CHISM'S DATA, REQUIRED TO SUPPORT NATIONAL MINIMUM PROGRAM, 1932

Percent of Tax Resources Required To Support a Defensible Program of \$60 per Unit of Educational Need

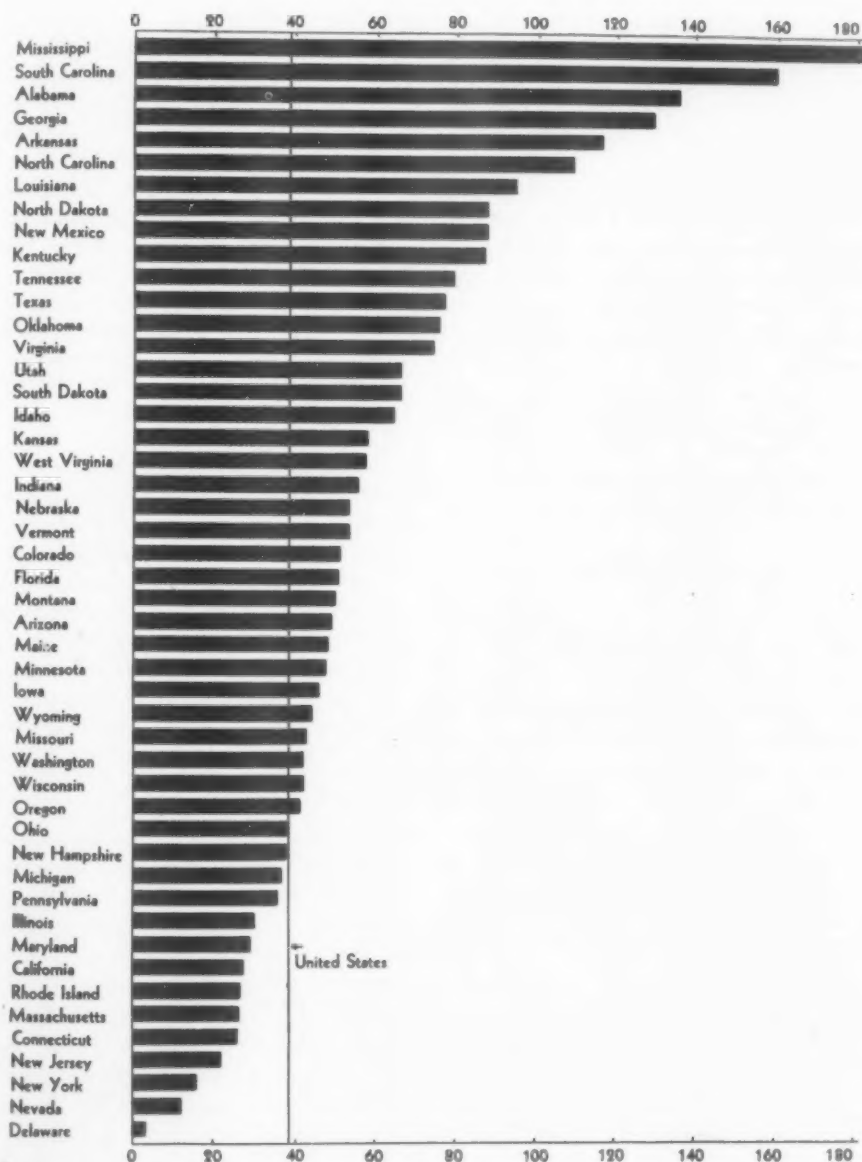


Research Division, National Education Association

FIGURE XII

EFFORT, BASED ON NEWCOMER'S DATA, REQUIRED TO SUPPORT NATIONAL MINIMUM PROGRAM, 1930

Percent of Tax Resources Required To Support a Defensible Program of \$60 per Unit of Educational Need



Research Division, National Education Association

the average effort of the upper fourth of the states or had spent 35.7 percent of their relative tax resources for education.

Only those marked with the number sign (#) could have met the national average in 1930 even if they had put forth the same effort as the average effort of the first six states or had spent 37.9 percent of their relative tax resources for education.

Summary

The cost of a defensible national minimum expenditure per unit of educational need as calculated by Mort at \$60 is utilized in this chapter.

Based on Chism's data for 1930, Mississippi would have had to put forth 6 times as much effort as Nevada or to have devoted 88.2 percent of its tax resources for education as against 14.6 percent in Nevada in order to provide the defensible national program.

Using Newcomer's data for 1930, Mississippi would have been required to put forth 55.1 times as much effort as Delaware in order to provide the defensible national minimum program or to have devoted to education 181.8 percent of its tax resources as against 3.3 percent in Delaware. Next to Delaware, the state which would have needed to put forth the least effort was Nevada where less than one-fifteenth as much effort would have been required as in Mississippi.

On the basis of Chism's data, sixteen states could not have financed the defensible national minimum program in 1930 even if they had put forth as much effort as the average effort of the six states which ranked highest in effort that year or had expended 37.9 percent of their relative tax resources for education.

With the same effort fourteen of the states could not have financed the national average expenditure per unit of educational need in 1930.

CHAPTER VIII

Summary and Conclusions

Summary

The purposes of this study have been: (1) to measure the relative efforts of the states to finance public education; (2) to measure the relative adequacy of the financial support provided public education in the several states; (3) to discover the relationship existing between the factors "effort," "adequacy," and "ability"; and (4) to determine the relative efforts that would be required of the states to support a defensible national minimum program of financial support for public education. The study covered each biennial year from 1920 thru 1932.

The formula developed in this study for the measurement of the effort of a state to support education was, with certain refinements, the ratio of the state's expenditures for current costs of public education to its relative tax resources. The specific expenditure figure utilized for each state was its expenditure for current costs of public education, including the combined expenditures of both the state and local school systems, exclusive of interest, plus the cost of the state department of education, less revenues received from the federal government and from subsidies from private sources.

Data as to the relative tax resources of the states were available in two recent studies. Chism's study provided data of this nature for each year from 1922 thru 1932 based upon the application of the Second Model Tax Plan of the National Tax Association. Newcomer's study provided data for the years 1920 and 1930 based on a uniform plan but differing in certain respects from the Model Tax Plan. The objectives of these two studies were not identical. Some of the differences between them were explained in Chapter III.

Calculations based on both these sets of data as to the relative tax resources of the states show that there is a considerable range in the efforts of the states to support education. On the basis of Chism's data, some states put forth more than twice as much effort as others. For the six biennial periods 1922 to 1932 combined, Wyoming¹ put forth the greatest effort, spend-

ing an average of 45.9 percent of its relative tax resources for public education whereas Nevada, which ranked lowest for the entire period, spent an average of 22 percent. The mean percent of tax resources expended by the states for education for the combined six years of the study was 29.8 with a standard deviation of 5.9.

On the basis of Newcomer's data as to the relative tax resources of the states, there was a much wider range in effort among the states to support public education. The percent of tax resources expended for public education in Vermont in 1920 was 15 times as great as in Delaware. In this year Vermont expended 48 percent of its relative tax resources for education and Delaware only 3.2 percent. The mean percent of the 48 states was 27.0 and the standard deviation 8.7. In 1930 the range was even greater, North Dakota expending 79.6 percent of its relative tax resources for education or 21.5 times as much as Delaware where the percent was only 3.7. The mean for the 48 states was 45.9 percent and the standard deviation, 14.2.

The extreme ratios in effort on the basis of Newcomer's data are partly due to the fact that Delaware's relative tax resources are very great according to Newcomer's data. But even excluding Delaware and taking the state with the next lowest effort, which was Nevada spending 16.4 percent of its relative tax resources for education, the ratio is 4.85 to 1 for 1930.

The Pearson correlation coefficient between the indexes of the efforts of the states to support education on the basis of the two studies was .65 in 1929-30, the only year for which data as to tax resources were available from both studies. This correlation means that there was some disagreement as to the relative efforts of the states, due to the lack of complete agreement between the two studies as to the relative ability of the states to support education. The latter is probably due in large part to the difference in objectives of the two studies explained in Chapter III. The general

¹ If revenue from permanent funds was excluded Wyoming would not rank so high on effort since approximately one-fourth of its expenditures for education were derived from this source. See Appendix, Table A.

conclusions of the present study point in the same direction when either set of data is used.

The adequacy of the financial support provided education in the states was measured by the same current expense figure as was used in the measurement of effort. The states where the level of support was most adequate spent from \$4 to \$5 for current expenses per unit of educational need to \$1 spent by the schools where the level of financial support was least adequate. The findings by this measure of adequacy were in substantial agreement with the efficiency ratings of state school systems made by previous investigators using certain qualitative and quantitative factors.

The relation between "effort" and "adequacy" when effort is calculated on the basis of data taken from Chism's application of the Second Model Tax Plan was an insignificant positive relationship except for one year when the correlation coefficient was $-.02$. This means that among the states which exert relatively great effort to support education there are some in which the amount of money thus provided is relatively adequate whereas in others it is relatively inadequate. And, on the other hand, among the states which exert relatively little effort to support education there are some states in which the funds thus provided are relatively adequate while in others they are relatively inadequate.

When "effort" was computed on the basis of Newcomer's data as to the relative tax resources of the states, the correlation coefficient between "effort" and "adequacy" was $.43$ in 1920. By 1930 the situation had so changed that the relationship was $-.37$, which represents a striking shift in the relationship between the two factors. In 1920 a relatively great effort by a state tended to result in relatively adequate financial support. In 1930 there was a tendency for the states exerting relatively great effort to be able to provide only relatively inadequate financial support.

The relationship between "effort" and "ability" was a significant but low negative correlation on the basis of either source of data as to ability, except for 1930, when there was the fairly high negative correlation of $-.77$ between "effort" and "ability" as measured on the basis of Newcomer's data.

Between the average of the factors "ability" and "adequacy" for the six years of the study

on the basis of Chism's data as to ability, the correlation coefficient was $.82$. On the basis of Newcomer's data as to ability it was $.31$ in 1920 and $.68$ in 1930.

Mort's figure of \$60 was taken as a defensible national minimum expenditure per unit of educational need. In 1930, using Chism's data, Mississippi would have been required to devote 88.2 percent of its relative tax resources to education in order to provide the defensible national minimum program whereas Nevada would have needed only 14.6 percent.

In 1930, using Newcomer's data, Mississippi would have been required to devote 181.7 percent of its relative tax resources to education in order to provide the defensible national program whereas Delaware would have needed only 3.3 percent. In Nevada, the next to the lowest state, only 12.2 percent would have been required.

On the basis of Chism's data sixteen states could not have met the defensible national minimum program in 1930 even if they had put forth as much effort as the average for the six highest ranking states or had expended 37.9 percent of their relative tax resources for education.

With the same effort, fourteen of the states could not have financed the national average expenditure per unit of educational need in 1930.

Conclusions

The principal conclusions to be drawn from this study are:

1. Generally speaking, there is a tendency for the rich states to provide their schools with more adequate financial support than is provided in the poor states and with less effort than the poor states exert.

2. There is considerable range in the relative efforts of the states to support education.

3. There is a wide range among the states in the relative adequacy of the financial support accorded education.

4. On the basis of Chism's data the range in "effort" is relatively narrow as compared with the range in "adequacy" as calculated in this study and in "ability" according to Chism's data, being but little more than one-third as great as the range in these two factors. On the basis of Newcomer's data the range in effort is

only slightly more than one-half as great in 1920, and one-third as great in 1930, as the range in "ability." The range in "effort" based on Newcomer's data, however, is three to four times as great as the range in "adequacy" of financial support as calculated in this study.

5. There is no significant relationship between the two factors "effort" and "adequacy."

6. There is a significant but low negative relationship between the two factors "effort" and "ability" except that in 1930 on the basis of Newcomer's data there was a fairly high negative correlation of $-.77$.

7. There is a rather high positive relationship between the two factors "ability" and "adequacy."

8. Many of the states, even if they put forth relatively great effort, could not provide a national defensible minimum program of financial support. In some states practically all the tax resources would be needed for the educational function of government alone.

Implications

What are the implications of these findings as to the relationship of the federal government to the financing of education? No significant relationship was found between the factors "effort" and "adequacy." While more poor states than rich states exert relatively great effort to support education, the rich states are nevertheless able to provide more adequate financial support for their schools than the poor states.

Various interpretations may be given the facts presented in this study. Those who favor federal support for education will contend that the principal implication of this study with regard to federal participation in the financing of education is that federal support is essential from two points of view: (1) Justice demands federal participation. It is unjust for the poor

states to be overburdened in their attempt to support schools whereas the more able states are only lightly burdened. It is unfair that the children of the rich states should have adequate educational opportunities as a result of the little effort their states exert, whereas the children of the poor states have inadequate educational opportunities despite the fact that their states exert great effort to support schools. The fact that there are exceptions to this statement does not undermine its general truth. (2) Some states are not able to support their schools adequately with a reasonable effort. Even if the Model Tax Plan were in force, the least able states would have to exhaust almost their entire tax resources even to provide reasonable financial support for their schools leaving nothing for the support of all other state and local governmental functions. Many others would need to spend a greater proportion of their tax resources for education than they could possibly afford to spend in view of other governmental needs.

Those who oppose federal support will maintain that the poor states are no more able to support other functions of government than they are to support education, that it is foolish to assume that the federal government should attempt to equalize burden and opportunity in all areas of state government, and therefore that such support should not be granted in the field of education. They will also contend that any attempt to equalize the burden of providing an acceptable minimum program of educational opportunity thru the federal government, will tend to perpetuate indefensible economic and taxation situations existing in the poorer states.

The present investigation has not concerned itself with these opposing points of view. It has presented a body of facts which may be interpreted by the reader in accordance with his own philosophy of the place of a public school system in a democratic society.

Appendix

I. The Effect of Excluding Revenue from Permanent Funds in Calculating the Efforts of the States To Support Education

It will be recalled that in the basic calculation of the efforts of the states to support education the revenue from permanent funds and school lands received and expended by the states was included in the expenditures of the states for education. Since there are certain arguments against this procedure calculations were also run excluding the revenue from this source in order to determine the possible error because of the treatment of this item. Table A shows the absolute and relative difference found by the two methods in all states where the relative difference was 5 percent or more, when effort is calculated on the basis of Chism's data as to the relative tax resources of the states. Only 14 states are affected to this extent in any year of the study. Wyoming, South Dakota, North Dakota, and New Mexico are the states most affected. In general the states listed in Table A would also be the states most affected if effort were calculated on the basis of Newcomer's data.

II. The Effect of Including Expenditures for Private Schools upon the Relative Efforts of the States To Support Education

The basic calculations in this study dealt with public education only. Several states have large enrolments in private and parochial schools. The public schools of these states, therefore, are required to educate fewer children thru public tax funds. Hence, the tax burden and the expenditures for public education are less, and the efforts of these states by the formula utilized in the basic calculations of this study are lower than if there had been no private and parochial schools. If these states had been required to provide public education for all the children thru tax funds, the expenditures for public education and, therefore, the efforts of the states, by the formula utilized, would have been raised. At least this would have been true if they had provided all the children with as good educational opportunities as were provided for those enrolled in the public schools.

TABLE A.—ABSOLUTE AND RELATIVE DIFFERENCE IN THE PERCENT OF RELATIVE TAX RESOURCES (CHISM) EXPENDED FOR PUBLIC EDUCATION CAUSED BY THE EXCLUSION OF REVENUE FROM PERMANENT FUNDS AND SCHOOL LANDS WHERE THE RELATIVE DIFFERENCE IS 5 PERCENT OR MORE

States	Absolute difference						Relative difference					
	1922	1924	1926	1928	1930	1932	1922	1924	1926	1928	1930	1932
1	2	3	4	5	6	7	8	9	10	11	12	13
Colorado			2.0						5.0			
Idaho	3.6	4.4	3.9	3.2	2.9	2.1	7.2	10.5	10.8	9.4	8.6	6.8
Indiana					1.7	2.0					5.6	6.8
Minnesota				1.5	1.5	1.7				5.0	5.4	6.1
Montana	3.4	3.4	3.1	3.4	3.9	2.3	7.4	9.4	9.8	10.9	12.7	7.9
Nebraska		1.5						5.0				
Nevada	2.1	2.3	1.9	1.7	1.4	1.5	9.6	9.8	8.2	7.6	7.2	6.9
New Mexico	5.2	5.1	8.1	7.0	8.1	6.8	11.8	12.5	21.1	21.3	22.3	17.1
North Dakota	2.9	8.3	4.2	2.8	2.4	3.3	6.1	17.1	11.2	8.0	7.1	11.7
Ohio	1.6						5.0					
Oklahoma	2.4	3.4	2.8	2.3			5.3	7.4	7.7	7.2		
South Dakota	5.7	4.7	3.0	3.1	3.0	3.2	17.3	14.9	10.3	12.0	12.0	13.3
Texas		2.5	2.0			1.7		9.0	6.7			5.7
Wyoming	7.3	7.0	7.5	7.4	11.8	10.6	15.6	14.4	15.7	17.0	25.7	24.9

Read table thus: Colorado spent 40.0 percent of its tax resources for education in 1926 including revenue from permanent funds. Deducting this revenue Colorado would have spent only 38.0 percent of its tax resources for education, an absolute difference of 2.0 percent and a relative difference of 5.0 percent. Similarly read table for other states and years.

Table B shows the relative and absolute difference in the percent of tax resources expended for education caused by the inclusion of expenditures for private schools in the states where this factor causes a relative increase of 10 percent or more.

III. Limitations of the Effort Formula Proposed

There are certain recognized limitations in the effort formula proposed used in the present study. The possibility of developing a more ideal measure of effort than the formula used depends upon:

1. The ability to identify and isolate the factors involved in effort not cared for by the basic formula already proposed
2. The extent to which these factors will lend themselves to objective measurement.

Some limitations in the formula proposed are presented in the following paragraphs. It should be pointed out that the limitations discussed here are factors which affect a state's ability to finance its educational program. They are, therefore, not limitations in the pattern of the formula but in data used in the

formula. If we knew exactly how these factors affect a state's total economic ability in relation to its total governmental and educational load, the results from the use of the formula proposed would be satisfactory.

All of the limitations discussed here presented problems that were beyond the scope of the facilities of the present investigation.

1. *The effort formula used fails to allow for variations in the ratio of total governmental needs to tax resources*—It assumes that the ratio is constant in all states when there is no available justification for the assumption. A satisfactory answer to this problem could be found only by the measurement of need in all areas of government and in the maintenance of private life as well. This has yet to be done even for one state.

2. *The measure of effort used fails to allow for variations in the ratio of needed educational services to other governmental needs*—The proposed formula for measuring effort involves the ratio of expenditures for education to the tax resources of the states. There is a considerable range in the percent of actual tax collections spent for education in the various states. This range is doubtless partially

TABLE B.—EFFECT OF INCLUSION OF EXPENDITURES FOR PRIVATE AND PAROCHIAL SCHOOLS UPON THE EFFORTS OF THE STATES WHERE THE RELATIVE INCREASE IS 10 PERCENT OR MORE

State	Percent of tax resources expended for education calculated on basis					
	of Chism's data				of Newcomer's data	
	1921-22		1929-30		1929-30	
	Percent difference		Percent difference		Percent difference	
	Absolute	Relative	Absolute	Relative	Absolute	Relative
1	2	3	4	5	6	7
Connecticut.....	5.2	19.9	3.9	16.7	5.4	16.8
Delaware.....	3.1	10.9	3.9	16.7	.6	16.2
Illinois.....	4.0	15.4	4.6	18.5	6.5	18.8
Louisiana.....	.....	.....	.....	.....	5.6	10.3
Maine.....	.....	.....	3.7	17.2	6.9	17.8
Maryland.....	2.4	10.6	3.3	14.9	4.1	15.1
Massachusetts.....	5.3	18.9	6.6	26.7	9.1	26.5
Michigan.....	5.0	14.4	4.9	13.2	6.6	13.3
Minnesota.....	.....	.....	3.0	10.8	5.6	11.0
Missouri.....	.....	.....	2.1	10.3	3.2	10.1
New Hampshire.....	14.1	52.8	7.7	35.0	14.3	33.6
New Jersey.....	.....	.....	4.6	15.5	5.4	15.5
New York.....	.....	.....	4.6	16.8	4.2	16.9
Ohio.....	.....	.....	3.4	12.8	5.4	12.8
Pennsylvania.....	.....	.....	3.5	15.0	5.7	14.7
Rhode Island.....	5.8	25.2	6.2	27.2	8.8	27.8
Vermont.....	5.4	13.2	3.5	11.9	6.1	12.2
Wisconsin.....	6.5	19.3	4.8	17.2	7.5	17.1

Read table thus: In 1921-22 Connecticut expended 26.1 percent of its tax resources for public education. (See Table 8.) Had expenditures for private and parochial schools been included the percent of tax resources expended for all education in Connecticut would have been 31.3, an absolute increase of 5.2 and a percent increase of 19.9 as listed in Columns 2 and 3 respectively. Similarly read data for other states and years.

caused by real difference in the ratio of educational needs to other governmental needs. Theoretically, the formula should take this range into account. To do so, however, would again require the measurement of all other governmental needs as well as educational needs. Strayer and Haig have discussed this point as follows:

It should be observed that equalization of the rate of taxation for educational purposes in the different sections of the state (New York) would not result in a uniform total tax rate thruout the state. There are other essential governmental needs besides public education which must be provided for in varying amounts, and at varying costs by the different localities.¹

Morrison also brings out this point with regard to the problem in local communities:

The ratio of school obligations in the local community to other civic obligations must be found and . . . the proper indices for weighting purposes arrived at.²

One of the principal problems in this connection is the widely varying ratio of adults to children found in the various states as shown

in Table C. Clark developed a formula the essence of which was "that beginning with a reasonable number of children, doubling that number reduces to one-fourth the amount of education that can be supplied for each child."³ However, he studied the problem only so far as the ratio of persons under twenty-one to those over twenty-one varied. It would seem that if this problem were to be comprehensively treated, information regarding items such as the following should also be brought to bear upon it: (1) the percent of persons in the productive age group twenty to forty-four years of age or some similar age grouping, (2) the percent of persons sixty-five years of age and over, (3) the percent of all dependents old and young, (4) the ratio of males to females, (5) the size of families, and (6) the standards of expenditures for different age levels.

To a certain extent both the Chism and Newcomer studies take care of the problem of ratio of adults to children and related issues since in the application of the personal income tax, exemptions are allowed for children and

¹ Strayer, George D., and Haig, R. M., *op. cit.*, p. 173.

² Morrison, H. C. *School Revenue*. Chicago: University of Chicago Press, 1930. p. 203.

³ Clark, Harold F. *The Effect of Population on Ability To Support Education*. Bloomington, Ind.: University of Indiana, 1925. p. 20.

TABLE C.—RATIO OF ADULTS TO CHILDREN (UNDER 21) BY STATES FOR 1930 AND CHANGE IN RATIO SINCE 1920

State	Ratio	Change since 1920	State	Ratio	Change since 1920
United States.....	1.46	.10	Minnesota.....	1.50	.13
South Carolina.....	.89	.03	Kansas.....	1.51	.14
North Carolina.....	.95	.05	Colorado.....	1.51	.00
Alabama.....	1.04	.09	Wisconsin.....	1.51	.13
Mississippi.....	1.05	.09	Michigan.....	1.54	.02
New Mexico.....	1.05	-.01	Iowa.....	1.56	.10
Georgia.....	1.06	.10	Maine.....	1.57	-.05
West Virginia.....	1.09	.03	Maryland.....	1.57	.10
Arkansas.....	1.09	.11	Rhode Island.....	1.58	.02
Utah.....	1.09	.05	Vermont.....	1.58	-.02
North Dakota.....	1.11	.11	Connecticut.....	1.59	.05
Virginia.....	1.16	.06	Indiana.....	1.62	.07
Oklahoma.....	1.16	.15	New Jersey.....	1.64	.13
Louisiana.....	1.17	.11	Ohio.....	1.64	.02
Tennessee.....	1.18	.10	Delaware.....	1.66	.08
Kentucky.....	1.19	.05	Missouri.....	1.67	.18
Texas.....	1.24	.15	New Hampshire.....	1.72	-.01
Idaho.....	1.24	.06	Massachusetts.....	1.72	.05
South Dakota.....	1.26	.08	Illinois.....	1.74	.19
Arizona.....	1.28	-.01	Washington.....	1.83	.11
Pennsylvania.....	1.42	.05	New York.....	1.83	.15
Wyoming.....	1.44	-.03	Oregon.....	1.87	.15
Nebraska.....	1.44	.12	Nevada.....	2.01	-.06
Florida.....	1.44	.20	California.....	2.13	.04
Montana.....	1.45	.05			

Read table thus: In 1930 there were in the United States 1.46 persons over 21 years of age for each person under 21 years of age. The ratio increased .10 since 1920 when it was 1.36.

other dependents. However, since the personal income tax is only one of the major items utilized, the factor under discussion is only partially corrected by its use.

3. *The measure of effort used fails to account for differences in standards of living in the various states*—In some sections of the country people live, as measured by material standards, on a lower standard than the people of other sections. This is true from the standpoint of both private and public purchasing of the elements of a standard of living. People in some states where standards of living are low would find it financially impossible to adopt the standard of living of other "higher standard" sections and continue to pay taxes. They must be content with low standards of living so far as private purchases are concerned in order to be able to pay taxes at all. Unless it is possible to equate for differences in standards of living it will not be possible to achieve a completely accurate measure of effort or perhaps more accurately, sacrifice. This factor is partially cared for by the basic measure of effort proposed. The Second Model Tax Plan and the Newcomer plan both call for the levying of taxes on income and wealth. These are the requisites of a standard of living. Therefore, since the rich pay more than the poor for taxes, this factor is taken care of to a certain extent.

To give adequate consideration to this factor it would be necessary to have a measure of the living standards of the populations of entire states. If the measure is to be in terms of dollars it would have to be corrected for the cost of living. A crude measure might be arrived at by equating money incomes in the several states for cost of living and arbitrarily assuming that a given equated income means a certain standard of living which could then be translated into an index of standard of living for the various states. Table D is suggestive of how this might be done. The index would then bear with a weight to be determined upon the efforts of the states to support education.

The standard of living index suggested in Table D is admittedly a very crude one. Despite its crudity, however, it does indicate unmistakably that the standard of living is an important factor and that the basic effort formula does not adequately take it into consideration.

4. *The measure of effort used fails to account for the varying costs of a given standard of living due to differences in the price range*—The Model Tax Plan and the Newcomer Tax Plan were applied uniformly in all states. No reduction in taxes is allowed in states where the private cost of living is higher than in others. Yet, other things being equal, to the extent that living costs are higher in one state than in another, the effort and sacrifices required for the payment of taxes will be greater.

It will be noted that the standard of living factor and the cost of living factor tend to counterbalance one another. The *standard of living* factor works adversely in the case of the rural states where per capita resources are low, whereas in these same states the cost of living factor is in their favor. The *cost of living* factor works adversely in the case of the more completely urbanized states where per capita resources by and large are relatively high, but where also the standards of living are relatively high.

Comparison of the index derived in Table

TABLE D.—STANDARD OF LIVING INDEX FOR TYPICAL STATES

(The per capita income for the United States was \$750 in 1929)

State	Income ^a per capita 1929	Index of cost of living ^b	Corrected income	Standard of living index ^c
1	2	3	4	5
Alabama.....	\$ 331	104.5	\$316.75	42.2
Connecticut.....	1,008	115.1	875.76	116.8
Illinois.....	987	114.6	861.26	114.8
Louisiana.....	438	105.5	415.17	55.4
Minnesota.....	610	108.3	563.25	75.1
Nevada.....	1,000	102.8	972.76	129.7
North Carolina...	317	103.2	307.17	41.0
Pennsylvania...	815	111.0	734.23	97.9
Texas.....	531	105.8	501.89	66.9
West Virginia...	485	103.2	469.96	62.7

Read table thus: The per capita income of Alabama in 1929 was \$331. The Mort-Harry cost of living index for Alabama is 104.5. The per capita income of each state is then reduced to the extent that the cost of living index is greater than 100. In the case of Alabama the \$331 income is reduced to \$316.75. The standard of living index is based upon the \$750 per capita income for the United States. The corrected income for Alabama is 42.2 percent of \$750.

^a Brookings Institution. *America's Capacity to Consume*. Washington, D. C.: Brookings Institution, 1934. p. 173.

^b The index numbers are 100 plus the excess of the Mort-Harry cost of living index over 100. See Mort, Paul R. "An Objective Basis for the Distribution of Federal Support to Public Education." *Teachers College Record* 36: 91-110; November, 1934.

^c Percent Column 4 is of \$750.

D with the Mort-Harry cost of living index, however, indicates that the standard of living factor is more to the disadvantage of the poor states than the cost of living factor is to the rich states. It seems, therefore, that if cor-

rections in the formula were made for these two factors, the results of its use would show a greater disparity in the efforts of the states than will be found in the use of the basic formula.

TABLE E.—ADEQUACY OF FINANCIAL SUPPORT OF THE PUBLIC SCHOOLS AS MEASURED BY THE NUMBER OF DOLLARS EXPENDED PER EACH OF THREE MEASURES OF EDUCATIONAL LOAD¹

State	1921-22			1923-24			1925-26			1927-28			1929-30			1931-32		
	Expenditure per			Expenditure per			Expenditure per			Expenditure per			Expenditure per			Expenditure per		
	A ^a	B ^b	C ^c	A ^a	B ^b	C ^c	A ^a	B ^b	C ^c	A ^a	B ^b	C ^c	A ^a	B ^b	C ^c	A ^a	B ^b	C ^c
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Alabama.....	18	24	13	20	28	14	23	32	16	25	34	19	27	37	22	22	31	19
Arizona.....	62	102	54	69	113	60	64	107	58	63	105	61	65	109	71	59	100	67
Arkansas.....	15	21	13	18	24	15	22	30	17	23	32	18	24	33	20	20	28	17
California.....	67	107	86	67	109	99	77	123	116	85	131	128	86	133	106	82	129	104
Colorado.....	55	92	64	59	101	71	63	106	74	66	112	77	65	111	81	59	101	76
Connecticut.....	58	79	54	64	87	58	65	89	63	72	99	67	74	104	71	73	105	73
Delaware.....	37	77	44	57	80	48	62	86	53	59	84	54	67	96	60	69	101	68
Florida.....	32	42	27	31	42	28	40	54	44	52	71	61	37	50	35	34	47	35
Georgia.....	16	22	12	18	24	13	21	30	15	22	30	16	23	32	19	21	30	19
Idaho.....	52	83	59	51	82	53	49	80	52	51	84	53	52	87	68	46	77	61
Illinois.....	54	75	50	59	84	56	64	92	61	65	96	65	69	102	69	63	95	65
Indiana.....	70	101	69	55	81	61	54	81	65	63	93	75	61	92	70	52	79	65
Iowa.....	51	85	62	60	94	70	68	108	80	60	96	73	60	96	73	53	86	66
Kansas.....	48	83	61	47	81	63	50	87	65	61	106	79	53	93	71	44	78	62
Kentucky.....	21	29	18	25	35	20	30	41	22	31	43	25	33	46	26	29	41	25
Louisiana.....	32	43	23	33	45	23	35	48	25	36	49	27	35	48	28	32	45	27
Maine.....	43	61	43	45	64	45	47	67	47	49	71	50	48	70	49	46	68	50
Maryland.....	44	61	33	48	67	37	49	69	39	53	75	45	57	81	47	54	79	48
Massachusetts.....	66	89	57	70	96	62	68	93	64	78	108	72	78	109	74	73	105	72
Michigan.....	65	92	57	68	97	66	77	109	77	79	112	84	80	115	81	68	99	69
Minnesota.....	57	87	62	65	101	68	62	95	65	64	99	68	65	101	70	60	96	69
Mississippi.....	16	22	14	16	22	14	20	28	20	27	37	22	26	36	25	26	36	25
Missouri.....	38	56	38	40	60	41	44	66	46	44	68	46	45	70	47	44	70	40
Montana.....	67	111	72	60	101	59	62	105	60	64	108	58	64	110	82	56	98	75
Nebraska.....	57	99	74	46	79	59	48	84	63	49	88	65	52	93	67	44	80	63
Nevada.....	77	129	97	81	142	106	83	141	108	78	134	119	80	138	109	79	138	116
New Hampshire.....	58	79	45	63	86	51	65	90	55	66	92	57	66	93	56	66	94	59
New Jersey.....	69	89	57	76	99	65	82	107	72	89	116	81	95	125	84	94	127	87
New Mexico.....	43	72	37	39	66	37	40	68	39	45	77	39	45	77	46	41	72	46
New York.....	71	100	63	76	108	69	78	111	73	89	127	86	95	138	92	94	140	96
North Carolina.....	22	29	18	26	35	22	30	40	26	30	41	28	31	43	28	25	35	24
North Dakota.....	47	82	64	56	100	67	50	89	57	54	98	58	55	100	73	45	84	59
Ohio.....	58	83	57	57	81	58	60	85	62	65	93	67	66	95	68	57	84	60
Oklahoma.....	36	54	35	39	59	37	36	55	34	35	54	33	42	65	44	35	55	39
Oregon.....	49	83	63	49	83	64	52	89	71	55	95	75	59	103	75	43	76	69
Pennsylvania.....	48	64	39	56	74	46	61	82	51	63	84	53	65	88	57	62	86	58
Rhode Island.....	55	72	41	58	76	45	61	81	49	67	89	55	72	95	58	71	98	60
South Carolina.....	17	22	13	22	29	16	25	34	19	27	37	21	29	40	23	21	29	18
South Dakota.....	49	86	61	49	88	63	50	90	66	52	93	66	52	95	68	49	90	63
Tennessee.....	19	26	17	23	31	19	27	37	23	28	39	25	30	42	27	27	39	26
Texas.....	28	45	30	25	42	27	30	49	33	29	48	31	33	54	36	34	57	37
Utah.....	46	68	51	45	68	51	44	69	52	47	72	54	48	75	59	41	65	53
Vermont.....	30	76	50	47	71	48	53	78	50	53	79	52	56	85	56	50	76	50
Virginia.....	28	38	22	28	39	23	28	40	23	30	42	25	31	44	28	29	41	28
Washington.....	60	93	68	59	92	67	59	93	70	61	97	73	62	101	78	57	92	73
West Virginia.....	42	56	36	45	61	40	52	70	44	50	68	45	53	72	49	46	64	44
Wisconsin.....	53	77	47	54	82	53	52	80	53	55	82	56	63	94	60	55	87	59
Wyoming.....	64	108	78	71	121	90	73	126	91	82	143	90	73	128	106	64	114	93
United States.....	47	67	43	49	72	47	53	77	51	56	83	55	58	87	58	54	81	56

¹ Calculated on the basis of the expenditure figure developed in this study.

^a Unit of need.

^b Pupil in average daily attendance.

^c Person 5-17 years of age.

IV. Comparative Adequacy of Financial Support of Public Schools as Measured by Various Units of Educational Load

The basic measure of the adequacy of financial support provided the schools utilized in this study has been the number of dollars expended per unit of educational need, the latter being calculated on the basis of the formula provided by Mort. Inasmuch as certain other measures of educational load are better known and perhaps preferred by some individuals, the number of dollars expended per pupil in average daily attendance and per person five to seventeen years of age was also calculated. Comparative figures on the basis of these three measures of educational load are given in Table E.

V. Effect of Excluding Revenue from Permanent Funds from the Expenditures of the States for Current Costs of Education upon the Relative Adequacy of Financial Support

Table F shows the effect of excluding revenue from permanent funds from the expendi-

TABLE F.—NUMBER OF DOLLARS EXPENDITURE PER THOUSAND UNITS OF EDUCATIONAL NEED WOULD BE DECREASED IN STATES WHERE THE DECREASE IS 5 PERCENT OR MORE IF REVENUES FROM PERMANENT FUNDS ARE EXCLUDED

State	1921-22		1929-30	
	Absolute difference	Percent difference	Absolute difference	Percent difference
Idaho.....	\$3,746	7.2	\$4,571	8.7
Indiana.....	.....	.....	3,422	5.6
Minnesota.....	.....	.....	3,554	5.5
Montana.....	4,915	7.4	8,084	12.7
Nevada.....	7,540	9.7	5,988	7.5
New Mexico.....	5,131	11.9	10,009	22.3
North Dakota.....	2,920	6.2	3,899	7.1
Oklahoma.....	1,958	5.4	.....	.....
South Dakota.....	8,565	17.4	6,442	12.3
Wyoming.....	10,116	15.7	18,804	25.7

Read table thus: In 1921-22 Idaho's expenditure per thousand units of educational need would have been decreased by \$3,746, a percent decrease of 7.2. Similarly read data for other states and years.

tures of the states for current costs of education upon the relative adequacy of the financial support accorded the schools for the years 1921-22 and 1929-30 for states where the percent difference was 5 or more.

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MILLIONS OF DOLLARS have been spent by the federal government in various relief enterprises which have indirectly increased the educational level of our people. These are temporary measures. Parents and teachers make a strong appeal for funds to support the permanent program of education. They ask that the children of every state have a chance to become the best citizens of which they are capable. Only a system of federal aid to the states can accomplish this goal.—Honorable Brooks Fletcher, Congressman from Ohio, in an address on the N. E. A. broadcast "Our American Schools," March 4, 1936.
