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Teacher Load in Selected Secondary Schools

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Clingenpeel — Teacher Load in Selected Secondary Schools

TEACHER LOAD IN SELECTED SECONDARY SCHOOLS

By

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CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

There has been expressed much concern with the working conditions of teachers. Children have been crowding rapidly into school buildings which have not kept pace with the ever-increasing enrollments. Lack of additional adequate school buildings has resulted in over-crowded classrooms. This condition brings into focus the position of the classroom teacher. The teacher is second in importance to the organization and administration of the secondary schools. Overemphasis of either administration or classroom work will tend to develop a detrimental effect upon the other. The teacher acts as an intermediary between the administration and the student group, making contacts with the students oftener than any other person connected with the school system, and putting into effect every plan or program of the school. Unless the right type of teacher is employed, and unless conditions are such that praisworthy teaching efficiency can reasonably be expected, the progress of the school will be retarded and to the same degree society will suffer, regardless of the efficiency of school administration. There is an increased awareness of the fact that the classroom teacher must not only be capable of teaching, but he should also be employed to teach subjects for which he is

best qualified.

The general opinion has apparently prevailed that secondary school teachers are overloaded with classwork and extra-class activities add still more heavily to their load. Considering the mental and physical stresses of teaching, a school day of more than eight hours tends neither to promote good healthy living for teachers nor fair working conditions.

Many teachers claim that the schools have burdened them with so many duties that the efficiency of teaching is seriously impaired. Most teachers are loaded with extra-classroom work such as scoring tests and theme papers, correcting papers and notebooks, making administrative reports, in addition to extra-instructional duties such as club and community interest activities. As a result, teachers are likely to find themselves devoting more and more of their time to extra-class work, which may definitely harm their classroom teaching skill and zeal. It is desirable that this tendency not be permitted to develop.

I. THE PROBLEM

Statement of the problem. The purpose of this study is to measure the teaching load of Santa Fe, New Mexico, public secondary school teachers and to compare this load with available norms. Teacher load is determined in units

by the Douglass[1] formula.

Delimitation of the study. As in all surveys of opinion, the validity of the study depends upon the quality and accuracy of the individual judgments expressed by the teachers answering the questionnaire. A second limitation arises in the fact that teachers vary considerably with respect to willingness and capacity for work. This may have a marked effect upon their estimates of individual load.

The teacher data used are limited to those obtained in the Santa Fe High School, Harrington Junior High School, and Leah Harvey Junior High School at Santa Fe, New Mexico.

Importance of the study. Administrators were forced to exercise rigid economies in each of the several phases of the public school program during the depression era of the 1930's. In that period the number of teachers employed was reduced and the number of pupil enrollments per class was just as sharply increased. With the advent of the second world war, prosperity emerged as a symbol of the economic life of the nation. Administration today, as far as economies are concerned, is not as encumbered with demands for stinting in every department. One of the greatest

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1 Harl R. Douglass, Organization and Administration of Secondary Schools, (Boston: Ginn and Company, 1945) Revised Edition, Chapter V.

obstacles confronting administrators everywhere is that of securing additional, albeit necessary, school buildings. More teachers have been added to faculties and more students have resulted in record enrollments. Several states have arbitrarily decreed that pupil-teacher ratios be set at 25 to 1, 30 to 1, or other combinations. With these problems to face, it behooves the administrator to consider carefully the establishment of teaching-loads on an equitable basis.

One hears comments from time to time concerning the heavy loads of teachers in the city of Santa Fe; a matter of concern when it is claimed that excessive teaching loads impair the effectiveness of teaching. Consequently, this study is for the purpose of investigating the teaching load of the secondary school teachers in Santa Fe.

Also, this study is intended to help the secondary school administrators in Santa Fe secure a general picture of the teacher load situation in their respective schools.

II. DEFINITION OF TERMS USED

Duplicate classes. This term describes classes with dissimilar personnel but the preparation for which is very similar or identical.

Teaching load. This term is the sum total of all the work required by the employer of the teacher, either expressed or implied, that that teacher must do in order to

keep his position and to remain in good standing. Exception is made only to those activities in which the teacher engages because of personal desire, or need, or for professional advancement.

III. SOURCES OF MATERIALS

A questionnaire was compiled to collect part of the information thought pertinent to the study. This was made after a careful study of other information blanks used in similar studies and from perusals of texts devoted to secondary school organization. Data on specific classes taught and the number of pupil contacts were obtained by a study of the daily schedules supplied by the respective schools. Other data were obtained through interviews with teachers and school officials.

Schools studied. The data were obtained by administering the questionnaire to teachers in the three previously mentioned schools, namely, Santa Fe High School, Harrington Junior High School, and Leah Harvey Junior High School. Santa Fe High School has an average enrollment of 700 students and a faculty comprising thirty-four instructors. It is a three-year accredited high school. The average enrollment at Harrington Junior High School is 500 students. The faculty is made up of eighteen teachers. Leah Harvey

Junior High School has an average enrollment of 478 students and sixteen teachers on the faculty. The two junior high schools are three-year schools.

IV. METHODS OF PROCEDURE

Copies of the questionnaire were distributed to sixty-nine teachers of the public secondary schools in Santa Fe in the winter of 1949-1950 and fifty-one replies were received. Accompanying the questionnaire was a letter addressed to each teacher, setting forth in concise terms the purpose of the study. Replies were anonymous in order to provide for frankness and freedom of expression. Copies of the questionnaire and the letter are found in the Appendix. The information requested in the questionnaire could be given readily and accurately except that relating to the time spent on extra-class activities. The questionnaire called for information concerning number of hours spent per week in extra-class activities. These findings were then used to derive the teaching load of each teacher respondent by the use of the Douglass formula. These teaching loads were then compared with norms established by Douglass.

Table I shows the number of questionnaires distributed and the replies received from teachers in each school.

Table II shows the proportion of questionnaires returned by teachers according to schools and subjects

represented.

V. ORGANIZATION OF REMAINDER OF THESIS

Chapter II is a review of literature relating to the problem of teaching load. Chapter III contains an analysis of the data as gleaned from the questionnaires returned by the teachers. In Chapter IV the reasons for selecting the Douglass formula as the basis for computation of the teacher's load are outlined, in addition to critical comments made in connection with the Douglass formula. This same chapter shows how the formula, with only slight modifications, may be applied to both junior and senior high schools. Chapter V presents the extent of teacher's loads in the junior high schools, with individual cases' loads listed in order. Chapter VI indicates the senior high school teachers' loads. Chapter VII reveals the situation when data from the junior high schools are combined with those from the senior high school. The combined teacher loads of the schools are then compared with the Douglass norms. The summary, conclusions, and recommendations appear in Chapter VIII. The Bibliography and Appendix, respectively, follow Chapter VIII.

TABLE I

THE NUMBER OF QUESTIONNAIRES
DISTRIBUTED AND RECEIVED

School	Number Distributed	Number Returned	Per Cent Returned
Santa Fe High School	35	17	49
Harrington Junior High School	18	18	100
Leah Harvey Junior High School	16	16	100
Total	69	51	74

TABLE II

NUMBER OF QUESTIONNAIRES RETURNED
ACCORDING TO SCHOOL AND SUBJECT

Subjects	Santa Fe	Harrington	Leah Harvey	Total
English	3	3	2	8
Foreign Language	1	1	1	3
Social Studies	2	3	3	8
Mathematics	3	3	2	8
Commercial	3	0	0	3
Physical Education	1	2	2	5
Shops	2	2	2	6
Music	1	1	1	3
Science	0	1	1	2
Art	0	1	1	2
Library	1	1	1	3
Total	17	18	16	51

CHAPTER II

REVIEW OF RELATED LITERATURE

Literature on teaching load. The subject of this study is not a new one. It has been a major administrative problem since the establishment of the first school having a faculty of more than one teacher. There are many factors which enter into the measurement of the teacher's load, and most of them are not only difficult to control, but are equally difficult to weigh accurately.

From a comprehensive study of the teaching load made by Cowing, the following facts are significant:

> The normal school day ranges in length from 4½ to 7½ hours, the median being 5½ hours. This time includes the 20-minute period during which the teacher is supposed to be in her room preceding the first recitation for the care of detail and for supervision. It seldom includes, however, all of the preparation of lessons, all of the time devoted to school work after the last recitation for the day; extra help for those who have fallen behind; the correction of papers and collection and arrangement of material for illustrative purposes; special conferences; department meetings; committee meetings; faculty meetings; school clubs and society meetings; clerical work; and the provision of social activities. The amount of time devoted to this sort is far greater than that given to regular class instruction, the percentage of time devoted to the latter being only 36.3 per cent, while 63.7 per cent is given to the other school work.[2]

In Cowing's study, one hundred teachers were selected.

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2 Helen Cowing, "A Teacher's Time," School Review, 31:351-62, May, 1923.

Forty-two of the teachers taught one subject only, but the rest taught from two to five subjects, the median being 2.3. These were usually related subjects, such as algebra and geometry, or history and civics. Forty-five teachers taught two grades, but the median number of grades taught was 2.9. The median number of classes assigned to the teacher weekly was 25. Those who had some administrative work as heads of departments usually were assigned less, sometimes fifteen and twenty. English teachers were assumed to have extra work for a given number of classes because of the needed personal conferences with students and frequent study of new literature, and the necessary correction not only for content but the form as well. They were usually given fewer classes, and their median was 21.

Cowing further stated that the causes for the gradual increase in teachers' work have included: first, a stronger interest in professional growth; second, a greater demand for careful supervision of extra-curricular activities and moral and vocational guidance; third, the increased demand for school participation in community projects involving special supervision; fourth, the need for longer, more accurate, and more comprehensive reports in larger schools, due to the complexity of the curricula and to crowded conditions; fifth, the lack of teachers; sixth, financial reasons.

Ayer studied four kinds of work loads:

1. The teaching load, or the number of hours per week spent in scheduled classroom teaching.

2. The instructional load, or the teaching load plus all the supplementary work directly related to teaching.

3. The official work load, or number of hours per week devoted to all official university work, including teaching, committee work, and administrative work.

4. The total time load, or the number of hours per week devoted to all duties in any way connected with the teacher's official position.[3]

One criticism frequently made of the number of teaching hours as a basis of total duty assignment is that this number gives little indication of the actual amount of time expended. To the average citizen, the time element is a matter of significant if not dominant importance in the case of wage earning.

In a similar study Baer reached the following conclusions:

> The teaching load expanded in pupil clock hours does not tell the whole story concerning the teacher's educational activities, but it is the most definite means of objectively measuring what teachers do. Both men and woman have heavier loads in the junior high than in the senior high school. The median for men and women are 544 and 506 pupil hours respectively in the senior high school, and 562 and 622 respectively for the junior high school.[4]

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3 Fred C. Ayer, "Computing and Adjusting the University Load," The Nation's Schools, 4:26-30, July, 1929.

4 Joseph A. Baer, "Teaching Loads in Junior and Senior High Schools in the Largest Ohio Cities," Educational Research Bulletin, 6:70-75, February, 1927.

He attributed this to the fact that, in general, classes were larger in the junior high school.

It is easy to see that Baer took into consideration only the number of students a teacher had during the day and the number of recitations per week (treated so that the figures would be in hours for common references). He did not consider the variations in difficulty in teaching different subjects, or the time spent in activities related to teaching.

The results of a study made by Davis[5] for the North Central Association of Colleges and Secondary Schools were published in the School Review in 1923. He conducted a questionnaire time study of approximately 1,100 teachers as to the time they spent on their various duties and solicited the opinions of 500 of these teachers on the most important factors affecting load. Davis, in his treatment of the study, said:

> Let it be recalled that in making these compilations, the average for an entire week was considered and that any strictly school work done on Saturday or Sunday of that week period is included. The most important determinants of the teaching load are: (a) the personality of the class; (b) the number of different preparations for class-work required daily; (c) the number of classes taught daily; (d) the amount of church work connected with the teaching process; (e) the extra-curricular and

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5 C. O. Davis, "The Size of Classes and the Teaching Load in the High Schools Accredited by the North Central Association", School Review, 31:412-429, January, 1923.

extra-classroom duties; and (f) the social and civic demands of teachers.[6]

He concluded that class size does not greatly affect the difficulty of the recitation period but that it does add somewhat to the clerical duties involved. He suggested that no set standard be employed for the measurement or adjustment of load, but that the principal adjust the load and that this be done on as scientific a basis as possible, taking into consideration the ability of the individual who is to carry it. He stated further that the North Central Association was not justified in demanding that class size should be thirty pupils nor that the maximum pupil-hour load be 150 per day.

About the same time, the various accrediting associations set up standards which expressed teaching load in terms of pupil-periods daily, periods per teacher, pupil-teacher ratio based on average daily attendance and combinations of these. The qualification is usually added that two periods of laboratory or of study hall equal one period of recitation. The basis on which these standards are arrived at is not usually given.

In 1926 Woody and Bergman published the results of their greatly detailed statistical analysis of the teacher load situation as it then existed. Their work had for its

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6 Davis, op. cit., pp. 412-429.

main purpose, the development of a method for the equalization of the load rather than the computation of the loads of individual teachers. Their data were taken from the questionnaires used by Davis in his work.[7] From these data they computed the median time required to prepare and teach all subjects and then the per cent of this time required for any particular subject.

They concluded that:

1. There is a great variation in the amount of time utilized by different teachers in connection with the teaching of any one subject.

2. The amount of time spent by the average teacher of the different subjects varies greatly.

3. In order to equalize the load, including both preparation and recitation, allowances should be made for differences and subjects taught.

4. The amount of time spent by teachers of three distinct subjects was much more than that spent by teachers of one or two distinct subjects, but that there was no significant difference in time between the teaching of one and two distinct subjects or between one subject and two subjects plus study hall supervision.[8]

In order to provide a working basis for their study, they assumed that class size made little or no difference in teaching load and that the two most important variables were number of classes taught and number of preparations.

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7 Davis, op. cit., pp. 412-429.

8 Clifford Woody and W. G. Bergman, "The Measurement and Equalization of the Teaching Loads in the High School," North Central Association Quarterly, II:339-59, December, 1926.

One of the earliest studies which tends to throw considerable light on the subject of teacher load was the one made by Koos.[9] On the basis of a time study made of 236 Minnesota high school teachers, he arrived at a figure showing the amount of actual time that it took to prepare, teach, and conduct all the activities necessary, prior to, during, and after the teaching of a forty-minute period in any school subject. While this study was made from the point of view of finding out what a teacher does with his time rather than of developing a method of computing teacher load, the method that has been followed by most subsequent investigators is implicit in this work.

In 1929, Reichard[10] published the results of his time study of the high school teachers in Minneapolis, which was in many respects similar to that by Koos made some time earlier. In it he arrived at the total time necessary to prepare and teach one period of any subject and he recommended a point system of measuring load based on his computed coefficients.

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9 F. H. Koos, "A Study of the Teaching Load of 236 Minnesota High School Teachers," (unpublished Master's thesis University of Minnesota, 1925.)

10 C. E. Reichard, "The Working Day of the High School Teacher in Minneapolis," (unpublished Master's thesis, University of Minnesota, 1929.)

Crofoot[11] published the results of her questionnaire study of seventy-nine teachers in the public schools of Bremerton, Washington. Some interesting figures are presented, showing how much time teachers spend on various aspects of their duties. The study, although valuable to the particular system in question no doubt, agrees in the main with similar results of other studies and adds little or nothing new to the data on the question.

Puckett[12] has reported data secured from 104 high schools in the North Central Association, each with a thousand pupils or more. His data show that the median number of academic class periods taught daily by each high school teacher was five. Since the median length of class periods was forty-five minutes, it may be assumed that these teachers spent 3.75 clock-hours daily in regular class teaching. The median clock-hours that these teachers were required to be in the school daily were 6.575. The Puckett study, however, reports no facts concerning actual time spent daily in various extra-class duties commonly assigned to teachers.

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11 Mentha Crofoot, "Amount of Time Spent in School Work in Terms of Teacher Hours and Pupil Hours," Educational Administration and Supervision, 17:446-452, May, 1931.

12 R. C. Puckett, "The Length of the High School Day," The American School Board Journal, 43:52, May, 1931.

Bain[13] made a study of the teacher's load in 22 junior high schools and fourteen senior high schools in Cleveland. The class period was forty-five minutes. He found that the actual class work required 69.6 per cent of the day in the junior high school and 80.3 per cent of the day in the senior high schools. Home room and extra-curricular activities took 8.9 per cent in the junior high school and seven per cent in the senior high school. Study hall, corridor, and luncheon duty took 7.3 per cent in the junior high schools and 5.1 per cent in the senior high schools. The teacher's periods per week in the junior high schools were 40 and in the senior high schools, 49.9.

Dean[14] sent a questionnaire to 500 public-school teachers of Newton, Massachusetts, to determine how long they worked daily and what forms of work their daily duties took. He found, first, that the typical teacher's day is approximately eight hours in length; and, second, that the teachers spent between 43 and 55 per cent of their daily time in actual teaching. The rest of the time was spent on non-teaching activities connected with the work. The non-teaching activities were divided between work related

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13 L. C. Bain, "The Size of Classes and Unit Expenditures," Educational Research Bulletin, Ohio State University, 14:201-207, December, 1935.

14 Stuart Dean, "The Teacher's Working Day," The Nation's Schools, 17:41, April, 1936.

to teaching and so-called routine work.

Lambert[15], in conducting a study in the Utah schools, found that the average woman teacher in a typical Utah school spends 5.11 hours each day throughout the year teaching regular classes, 1.62 hours preparing for the next day's teaching, one-half hour arranging her room, one-half hour marking papers, and about twenty minutes in conference with pupils. These and other varied extra-class duties take four hours of the average teacher's day. This, added to the five hours of formal teaching, constitutes the average woman-teacher's day of slightly more than nine hours.

The typical man-teacher spends 4.8 hours each day in the Utah schools in regular class instruction, one hour preparing for the next day's work, about thirty minutes supervising extra-curricular activities, and the remainder of the day in administration duties. His total day is almost identical in length with that of the woman teacher, divided almost equally between teaching and extra-class duties.

In 1925, Heilman[16] showed that between actual teach-

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15 A. C. Lambert, "How Long Is the Teacher's Day?" The Nation's Schools, 13:38-40, February, 1934.

16 J. D. Heilman, "The College Teacher's Load," Educational Administration and Supervision, 11:167-187, March, 1925.

ing load and total load, a coefficient of correlation of only .24 existed. This, of course, demonstrated that, as a measure of total time load, pupil-hours and similar units were little better than a guess.

No description of the teaching load can be regarded as adequate which does not take into account its subject make-up, that is, the number and combination of subjects represented in a teacher's day. The teaching load is conditioned by a large number of factors. As the problem is viewed from different angles, the importance of these various factors receives shifting emphasis. The problem is so large and so complex that an evaluation of its entire range is impossible in a single investigation. There are some elements involved which are of such a nature that it is difficult to devise an adequate and appropriate method of measurement. No one should expect the evidence gathered by various investigators working under different conditions and using different methods and definitions of the problem to be entirely in agreement.

Regarding the measuring of the teaching load, Almack and Lang said:

> No real estimate of the teaching load can be made that does not take into consideration many factors, of which the following are examples:

1. The pupil hour.

2. The classes -- age, grading, discipline, attendance.

3. Length of school day.

4. Types of school organizations.

5. Subjects taught.

6. Daily preparations necessary.

7. Amount of outside work connected with classes.

8. Amount of extra-class work.[17]

Tritt and Keyes said:

> The teaching load in the high school cannot fairly be measured of periods of work, of number of classes, number of pupils, or number of preparations, since all of these elements enter into the total actual load.[18]

Brownell[19] contributed an analysis of the question together with an extensive resume of what has already been done. His study, which was a detailed questionnaire time report of 285 teachers, throws much light on the subject of what factors affect the teaching load as well as who controls these factors. He compared teachers on the basis of nine different points, any or all of which he thought might be

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17 J. C. Almack and A. R. Lang, Problems of the Teaching Profession (Boston: Houghton Mifflin Company, 1925,) pp. 195-96.

18 W. T. Tritt and M. M. Keyes, "Estimating Teaching Loads by Means of Subject Coefficients," The Nation's Schools, 5:61-65, April, 1930.

19 S. M. Brownell, "The Working Hours of Secondary School Teachers in Connecticut," Doctor of Philosophy Dissertation, Yale, 1926.

factors tending to regulate teaching load. His nine points were: size of school, length of school day, sex, marital status, place of abode (whether living at home or in rooms), experience, salary, number of preparations, and difficulty of subject. He concluded that the differences in load that exists between groups homogeneous with respect to one of the nine points is slight compared with the range in time between individuals within any one group. That pupil-hour load, the generally accepted basis for equalizing teaching load, is found to have no relationship to the total time devoted to school work nor the time devoted to teaching duties. And finally, that the wide range in time devoted to school work is found to be due to the individual teacher, i. e., the teacher exerts sufficient control over the time he devotes to school work to counteract, if he wishes, a heavy load placed upon him by the administrator.

The most extensive and informative study on teacher load within the past few years, is part of a survey by the Cooperative Study of Secondary School Standards[20] on the evaluation of secondary schools throughout the United States. A modified plan of the Douglass formula was developed for utilization in the calculation of weekly load units for each

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20 Cooperative Study of Secondary School Standards, How To Evaluate A Secondary School, (Washington, D. C., 1940 Edition).

teacher. This study considers all factors in the computation of load as to number of pupils, number of class meetings per week, duplications, comparative degree of difficulty of subject taught, cooperations, and length of period.

Romine suggests the consideration of another factor which he thinks should be investigated.[21] It is that of teacher qualifications and training. It is Romine's contention that less well-trained teachers may necessarily spend more time in out-of-class preparation than their more experienced colleagues.

Cooke, in the Problems of the Teaching Personnel, says:

> Probably no precise definition can be stated because teaching load has been given more than one meaning. The United States Bureau of Education in 1911 suggested the following definition: "The total number of pupils divided by the total number of teachers gives what is technically known as the teacher's load." A few years later this definition seems to be almost discarded. By 1927, the method of measuring the teaching load was the number of pupil clock hours per week, the formula for which is: number of pupils times number of days class meets times number of minutes class (meets) divided by sixty equals number of pupil clock hours for that division. In like manner the total pupil clock hours may be obtained.[22]

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21 Stephen Romine, "Estimating the Time Required for Out-of-Class Teaching Preparation", American School Board Journal, 117:117-26, November, 1948.

22 Dennis H. Cooke, Problems of the Teaching Personnel, (New York: Ginn and Company, 1933), pp. 219-220.

This definition does not take into consideration any of those duties or services that the teacher may perform outside of the classroom. A term broader than teaching load was then being used, namely, service load, including all of those activities rendered by the teacher.

One survey dealing with opinion of the individual load is by the National Education Association, in which it is stated:

> The earlier investigations were concerned primarily with questions of pupil-teacher ratio, class size, number of periods, length of day, et cetera. More recent studies have attempted to develop improved measures of teaching load, which would take into consideration factors such as subject difficulty, number of different preparations, extra-curriculum activities and the number of duplicate classes.[23]

In this study, questionnaires asking teachers' opinions with respect to load were circulated to teachers throughout the United States and responses were received from forty states.

Replies were received from 4,000 teachers, of which, 3,707 were used in the survey. This study revealed the fact that teaching load pressure arose from a large number of sources among which no single factor was consistently troublesome and that the load pressures particularly disturbing in one situation may have been trivial factors

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23 National Education Association Research Division, "The Teacher Looks at Teacher Load," Research Bulletin, 17:223-274, Number 5, November, 1939.

in another. This means that only through the study of local situations could the relative weight of load factors be accurately and adequately determined and adjusted.

In making a study of the teaching load, the problem may be attacked from two angles -- one by means of teacher opinion of his load and another by means of a formula and established criteria. The National Education Association survey[24] was based on teacher opinion, whereas, Douglass has made extended studies of the factors that constitute teaching load by means of the formula method. Douglass stated:

> .... that the formula will yield estimates that are as accurate and valid for ordinary administrative and supervisory purposes as a great many formulas upon which important estimates and decisions are made in the industrial and business world.[25]

In Cox and Langfitt's book on high school administration, it is stated concerning teacher load:

> .... that the North Central Association has set up standards and recommendations that teachers should teach not more than five periods a day, should have not more than one hundred fifty pupil-periods, e. g., five classes of 30 pupils each, and that the pupil-teacher ratio should be not more than thirty to one (25 to 1 is recommended).[26]

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24 National Education Association, op. cit., pp. 223-274.

25 Harl R. Douglass, Organization and Administration of Secondary Schools, (Boston: Ginn and Company, 1932), pp. 108-128.

26 Philip W. L. Cox and R. Emerson Langfitt, High School Administration and Supervision, (New York: American Book Company, 1934), p. 273.

The Associations, respectively, of the Middle States, Southern States, and Northwest States, have similar standards, though they permit six periods a day of teaching assignments while recommending five.

The greatest shortcoming of such standards lies in their inelasticity. This is due to their applications to practically all subjects.

The North Central Association of Colleges and Secondary Schools has had among its standards for accredited secondary schools certain regulations concerning teaching load and size of classes. The salient clauses of these standards follow:

> The number of daily periods of class room instruction given by any teacher shall not exceed five ..... In interpreting this standard in connection with laboratory work in science and in connection with study hall supervision, ... no combination of any such work amounting to more than 35 periods per week shall be required of any teacher.
>
> In general, no teacher of academic subjects shall be assigned more than 150 student-hours of class instruction per day. No school whose records show an excessive number of pupils per teacher based on the average daily attendance shall be accredited.[27]

Woody and Bergman reported that in 1922 only two per cent of the North Central Association teachers taught more than six classes daily, and by 1925 the number with this

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27 C. C. Davis, op. cit., pp. 412-429

load has decreased to 1.1 per cent.[28] In 1925, 53.6 per cent of the teachers were teaching five classes daily, and 27.5 per cent were teaching four classes daily.

Roemer[29] also found that of the teachers in the schools accredited by the North Central Association, 31.2 per cent of the academic teachers taught less than five classes; that 54.2 per cent taught five classes daily, and that 13.9 per cent taught six classes daily. Only seven tenths of one per cent taught more than the maximum number of classes daily. Approximately 85 per cent of the teachers carried the recommended load or less.

A study published in 1934 by Stewart[30] reveals an interesting trend. His work was carried out at the college level and utility of the study rests in his development of a method of predicting the number of instructors needed to carry out a given schedule within a department. While his method is not particularly applicable to the present study, his assumptions, which he goes to great trouble to justify on a statistical basis, seem worthy of mention.

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28 Woody and Bergman, op. cit., p. 342.

29 Joseph Roemer, "The Teaching Load," U. S. Bureau of Education Bulletin, Number 16, pp. 44-52, 1928.

30 L. O. Stewart, "Teaching Loads: Their Measurement and Calculation," Journal of Engineering Education, 25:225-239, November, 1934.

His claim that size of sections and number of years of experience teaching a subject are important determinants of the total load is opposed to the views of many of the earlier writers, especially Brownell. On the other hand, his consideration of "number of sections taught" and "number of duplicate sections" as basic factors, is in accord with the more advanced writers, notably Douglass.

Eminently worthy of note is his basic assumption of a total work week of 44 hours to be made up of thirty-six hours for preparations, classes, grading of papers and conferences with students, and eight hours for extra-curricular duties including student activities and administrative cooperations. Such an assumption seems hardly fair to the teacher in face of the present tendency in the industrial world to shorten the work week to forty and in some cases even to thirty-six hours. However, with the number of teachers at present working ten to sixteen hours a day to keep up with the work imposed on them by their administrators, it is heartening to find a writer with the courage to recommend the actual employment of teachers on the basis of a limited work week.

According to studies made during the past several years, the major problem connected with the teaching load is still unsolved. Many articles have been written giving arguments for and against the present load of teachers and

the present size of classes. A few studies have thrown some light on a possible solution of the problem; other studies have reported conditions as they exist; others have been mere vague and verbose expressions of personal opinion without the contolling influence of actual investigation. Babour summed up the situation very well:

> Most of the articles on class size which did not report experiments, fall under the classification of essays expressing thoughts and opinions of authors. The essays range from attempts to prove that in the secondary schools large classes are preferable because they offer a better socializing democratic situation, to impassioned pleas for smaller classes where character development is possible.[31]

In one of his investigations, Davis[32] found that eight per cent of the teachers in the accredited high schools of the North Central Association made but a single preparation, and that eight per cent made five preparations or more: on the average, the 1,100 teachers reporting made 2.78 preparations daily.

Langfitt[33], in his book on high school organization, stated that one factor given considerable attention in the construction of the daily schedule is teaching load. The professional opinion of the principal regional educational

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31 Richmond Babour, "Class Size Literature," High School Teacher, 11:13, January, 1935.

32 C. O. Davis, "Proceedings of the Twenty-Eighth Annual Meeting of the North Central Association of Colleges and Secondary Schools," pp. 30-41, 1923.

33 R. Emerson Langfitt, The Daily Schedule and High School Organization (New York: The MacMillan Company, 1938), pp. 45-114.

associations throughout the country was reviewed concerning the factors and their comparative weights which comprised load. An investigation was made of various formulas that have been constructed up to this time for load measurement. The revised Douglass formula, according to Langfitt, has been applied more extensively than any of the other formulas. The author's main point of view is that principals should attack the making of their schedules by computing the total teaching load for the entire organization to be assigned to all teachers in terms of number of classes, average class enrollments, subject coefficients, assigned extra-classroom activities, and other factors. An approximate average for the individual teaching load may then be fixed and allowances made in formulas for variations from the average or norm. Langfitt made it clear that the present formulas do not measure adequately teaching load because of the difficulty in assigning proper weights to the various factors.

Studies have been made to determine the effects of various factors on teaching load, and comparisons between teaching loads in various localities have been drawn. Some of these studies recommend that certain methods be employed to evaluate teaching load, most of them simply an arbitrary measure for purposes of comparison. Few of the writers go so far as to mention any method other than the one they employ, and if a comparison of methods is even hinted, it

will, as a rule, take the form of a dogmatic expression of opinion. In this review, mention will be made of a few of those works in which factual materials and arguments have been found which are pertinent to the general problem of teaching load which is the purpose of this study.

In 1928 Douglass published a formula for the computation of teacher load, which he revised and extended in 1932. The formula, as revised in 1932, is discussed in some detail later in this work and hence no further reference is made to it here.

Quanbeck and Douglass[34] found that men, on the average, carried a slightly heavier load, 1.5 per cent more, than women, in spite of the fact that they were found in larger proportion in larger schools where the teaching load was less than in the smaller schools. This was due entirely to the heavier cooperation load assigned to men teachers, which was, on the average, twenty-three per cent higher than that borne by women. With respect to types of load, there were greater differences within the sex than between the sexes. Teachers in schools not accredited by the North Central Association carried a load approximately seven per cent heavier, on the average, than those in schools accredited

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34 Martin Quanbeck and Harl R. Douglass, "Teaching Loads in High School", The Nation's Schools, 15:38, February, 1935.

by the association.

In the same study[35] it was found that the beginning teacher carried a distinctly heavier load than her colleagues with five or more years' experience. The difference was, on the average, approximately ten per cent of the load of experienced teachers. While there was little difference between the loads of experienced and inexperienced teachers in small schools, the beginning teacher had the greater load in each size class. Beginning teachers were assigned heavier loads of both an instructional and an extra-class nature.

Hotz, reporting on the secondary schools approved by the North Central Association, found that the percentage of schools having a pupil-ratio of over 25 had increased from 11 per cent in 1929-30, to 31.9 per cent in 1932-33.[36] The number of schools having a pupil-teacher ratio of over 30 had increased from 13 per cent in 1930-31 to 16.4 per cent in 1932-33. The percentage of schools, having such ratios as from 26 to 30 pupils in 1932-33, varied regularly according to size of schools, from 7.1 per cent for schools under two hundred, to 55.8 per cent for schools of one

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35 Quanbeck and Douglass, op. cit., p. 39.

36 Henry G. Hotz, "Statistical Summary of Annual Reports From Secondary Schools Approved by the Association For 1932-1933," North Central Association Quarterly, 8:177-187, September, 1933.

thousand or more.

Dailard and Jenkins contribute some advice, viz.:

> An excessively high pupil-teacher ratio and an over-burdening teacher load may help to balance expenditures against income, but it may also serve to throw society out of balance. Education -- good, fair, or poor -- is the very foundation of the school budget and the often neglected base of the inseparable budget triangle of income, expenditnre, and education. The determination of a fair teaching load has very important budget implications, but even more serious are the educational implications.[37]

Both Dailard and Jenkins recommend that the normal range of teacher time expenditure should average from forty to forty-five hours per week, and that the schedules of teachers exceeding 45 hours per week due to heavy extra-class duties or other administrative assignments should be adjusted to distribute the load equitably.

In 1925, Almack and Bursch[38], suggested a method of measuring teacher load, which takes into consideration both the size of the class and the difficulty of teaching different subjects, by a method of subject-weights. These subject-weights were simply index numbers arrived at by the opinion of a number of teachers by which the pupil-hour load in each subject was multiplied. These were then added to find the total load. Almack and Bursch said:

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37 Robert Dailard and Robert E. Jenkins, "Our Children Won!" American School Board Journal, 117:23-4, August, 1948.

38 John C. Almack and J. F. Bursch, The Administration of Consolidated and Village Schools (Boston: Houghton Mifflin Company, 1925), pp. 87-89.

Taking standards as we do at present, about the only thing that can be done is to get the consensus of opinion of the teachers themselves concerning the relative difficulty of the various duties. To do this, the following procedure is suggested:

1. Make up a list of all the school and community activities in which the teachers will be expected to share.

2. Take a common activity, such as teaching English Composition for an hour (including the marking of papers).

3. Call this standard and have all the teachers weigh the other activities in comparison with this standard.

4. Average the weights assigned by the teachers to find what may be called the final subject weights.

5. Multiply the number of pupils a teacher has in every activity for which she is responsible by its subject weight and by the number of periods a week and call this the subject load.

6. Add all the subject loads of each teacher to find the teaching load.[39]

Brown and Fritzemeier [40] in 1931 published the results of a study in which they developed a method of computing teacher load so as to take into consideration the effect of subject-weight, number of daily preparations, and number of separate fields taught as well as the more traditional items of class size and number of periods. In order to do this they started with the method suggested by

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39 Ibid., p. 87-89.

40 E. J. Brown and L. H. Fritzemeier, "Some Factors in Measuring the Teacher's Load," Educational Administration and Supervision, 17:64-69, January, 1931.

Almack and Bursch but computed their own subject-weights. In addition they obtained an estimate of the percentage in increased difficulty because of the number of daily preparations and the fields taught. These estimates were furnished by twenty professors on the faculty of the Kansas State Teachers College. This percentage increase is added to the total load as computed by the basic method.

When Douglass developed his early formula, he made the suggestion that a further study be made to determine subject coefficients that would weigh his results so as to take care of such factors in the teaching load as inherent difficulty of the subjects taught and related items. In 1930 the results of such a study, made by Tritt and Keyes[41], were published. They computed numerical coefficients for each of the common subjects on the basis of teacher opinion. These coefficients, when used in conjunction with Douglass' formula, which they used as the basis for their computation of teacher load, gives somewhat modified results. The estimates, on which their study was based, were those of ninety-one teachers in the Belmont High School in Los Angeles.

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41 Tritt and Keyes, op. cit., pp. 61-65.

Cole[42] sought to determine by means of teachers' judgment the relative difficulty of five aspects of teaching in fifteen high school fields and reported rank order as follows: class instruction, 4.5; preparation, 3.3; evaluating results, 2.7; management and use of equipment, 2.5; and conferences, 2.1. Cole also reported a ranking of high school subjects as to teaching difficulty by a method which used the five aspects of teaching as follows: science, 4.2; home economics and manual arts, 4; typing and composition, 3.6; American history, civics, economics, music, and bookkeeping, 3.2; literature, foreign language, and world history, 3; and stenography, 2.6.

Cole concluded that changing methods are placing a different emphasis on each of the five teaching phases. He suggests that modern devices for measuring teaching load should assign a relative difficulty value for each phase of the teaching process if valid comparisons are to be made. He advised that the study's findings were not extensive enough to be conclusive.

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42 Thomas R. Cole, "Measuring Teacher Loads in Secondary School Subjects," American School Board Journal, 115:31-2, December, 1947.

CHAPTER III

ANALYSIS OF TEACHING LOAD

Lack of opportunity to adjust to the requirements of a new teaching position, or limited amount of total experience may be important factors in teaching load. In general, the teachers participating in this study are a mature and adjusted group so far as teaching experience is concerned. About four-fifths of them reported five years or more of total teaching experience. The median teaching experience, as shown in Table III, was found to be eleven years.

Table III shows the degrees obtained by teachers in this study, the number of hours they have acquired in graduate work above the bachelor's degree, and the number of years they have taught.

In Table IV, it is shown that approximately 27.5 per cent of those who cooperated in the study have obtained ten semester hours or less in graduate work above the bachelor's degree. Twenty-one and six tenths per cent of the teachers have eleven to twenty semester hours of graduate work. Twenty to thirty hours inclusive have been earned by 13.7 per cent of the teachers. The other teachers who have reported earning over thirty semester hours in work beyond the bachelor's degree were found to approximate 37 per cent of the group in the study.

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TABLE III

DEGREES EARNED AND TEACHING EXPERIENCE

Teacher	Degree	Number of semester hours in graduate work above bachelor's degree*	Number of years of teaching experience
1	B. S.	12	11
2	B. S.	3	3
3	B. S.	0	2
4	M. A.	--	0
5	M. S.	--	7
6	B. S.	22	0
7	B. S.	9	1
8	B. S.	0	2
9	B. A.	2	7
10	M. M.	--	5
11	B. A.	18	0
12	M. A.	--	15
13	B. S.	24	17
14	B. A.	0	9
15	B. A.	7	5
16	B. A.	40	26
17	B. A.	19.5	15
18	M. A.	--	22
19	M. A.	--	8
20	B. A.	12	16
21	B. A.	20	30
22	M. A.	--	15
23	B. A.	0	4
24	B. S.	27	6
25	B. S.	24	10
26	M. A.	--	17
27	B. S.	0	7
28	B. S.	18	8
29	B. S.	0	12
30	B. A.	32	4
31	B. S.	10.5	17
32	B. A.	33	12
33	B. A.	8	11
34	B. S.	0	21
35	B. A.	12	12
36	B. S.	29	6
37	M. S.	--	16
38	B. S.	4	10
39	B. A.	20	11
40	B. S.	18	18
41	M. A.	--	23
42	M. A.	--	11
43	B. A.	23	19
44	B. S.	6	11
45	M. A.	--	17
46	M. A.	--	10
47	B. A.	30	20
48	M. A.	--	37
49	M. S.	--	22
50	B. A.	42	20
51	B. S.	16	14

Median years of experience - 11

* The number of semester hours in graduate work is not recorded for each master's degree holder.

TABLE IV

DISTRIBUTION OF DEGREES HELD BY

SANTA FE TEACHERS

Degree	Number of cases	Per cent
B. A.	18	35.3
B. S.	18	35.3
M. A.	11	21.5
M. S.	3	5.9
M. M.	1	2.
Total	51	100.0

TABLE V

NUMBER AND PERCENTAGE OF SEMESTER HOURS

OF GRADUATE WORK

Hours	Number of cases	Percentage
1-10	15*	41.7
11-20	10	27.8
21-30	7	19.4
31+	4	11.1
Totals	36	100.0

* This information was not available for some teachers.

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1-10	15*	41.7
11-20	10	27.8
21-30	7	19.4
31+	4	11.1
Totals	36	100.0

* This information was not available for some teachers.

TABLE VI

MAJOR AND MINOR AREAS OF TRAINING AND TEACHING FIELD

Teacher	Major studies	Minor studies	Subjects teaching
1	Home Economics	English, Biology	Library, English
2	Physical education English	Psychology Science	Physical education
3	Speech, Industrial arts	Psychology	Social studies
4	Sociology	Psychology Political science	Social studies Physical education
5	Art	English, speech	Art, English
6	Industrial arts	Physical education	Shops, crafts
7	Mathematics	Psychology	Mathematics
8	Biology	History, Education	Social studies
9	Philosophy	English, Greek	English, drama
10	Music education	Education	Music, English
11	Spanish	Music	Spanish
12	Education	Art	Mathematics
13	Physical education	Social studies Geography	Mathematics, Physical education
14	Home economics	Social studies	Home economics
15	English	Social studies	English
16	English	Science	General science
17	Mathematics	Science	Mathematics
18	Home economics	Mathematics	English
19	Music (voice)	Piano	Music
20	Spanish	English	Spanish
21	Mathematics	Psychology	Mathematics
22	Mathematics	French	Physical education Mathematics
23	Architecture	Mathematics	Mathematics
24	English	Social studies	Social studies
25	Home Economics	English	English
26	Home economics	History	Homemaking
27	Physical education	English	Physical education
28	Industrial arts	Mathematics	Shops
29	Art	History, Science	Social studies Art
30	Spanish	History, Education	Social studies, Spanish
31	Education	History	Social studies
32	Education	Science	Science, Audio-visual education
33	Social studies	Library science	Library
34	Education	English	English
35	Social studies	Mathematics, Physical education	Mathematics, Physical education
36	Mathematics	Industrial arts	Mathematics
37	Home economics	General science	Homemaking
38	Speech	Music, English	English, drama. Speech
39	Commerce, Education	Speech, Art	Typing, Shorthand
40	Business administration	Sociology	Bookkeeping, Typing
41	English	Modern language	English
42	Industrial arts	Music, Physical science	Crafts, Mechanical drawing
43	History	Government	Social studies. Physical education
44	Physical education	Science	Physical education
45	Music	Education	Orchestra
46	Spanish	Social studies	Spanish
47	Zoology	English	English
48	Mathematics	Science, English	Mathematics
49	Social studies	Mathematics	Business mathematics
50	Latin	Spanish, Greek	Library, Art
51	Social studies	Physical	Social studies

TABLE VII

COMPARISON OF TEACHERS TEACHING IN MAJOR AND/OR MINOR FIELDS WITH THOSE NOT TEACHING IN SUCH FIELDS

	Number	Per Cent
Number of teachers teaching in major and/or minor fields of training . . .	47	92
Number of teachers not teaching in either major or minor fields of training	4	8
Total	51	100

TABLE VIII

NUMBER AND PERCENT OF TEACHERS
TEACHING IN ONE OR TWO AREAS

	Men	Percent	Women	Percent	Total	Percent
One area	17	68	18	69.2	35	68.6
Two areas	8	32	8	30.8	16	31.4

TABLE IX

NUMBER OF HOURS PER WEEK DEVOTED BY SUBJECT TEACHERS TO THE PREPARATION AND PLANNING OF LESSONS

Subject	Number of Teachers	Number of teachers that reported the following hours spent per week in lesson preparations						
		1-2	3-4	5-6	7-8	9-10	15-17	18-20*
English	9	1	1	2	3	1		1
Foreign language	3			1		2		
Social studies	8	2		4		1	1	
Mathematics	7	1	1	2	2	1		
Commercial	3	1		1	1			
Physical education	5	4			1			
Shops	6		2	1	2	1		
Music	3			1	1	1		
Science	2			2				
Art	3	1	1			1		
Library	2	1		1				
Total	51	11	5	15	10	8	1	1
Approximate per cent of total		22	10	29	20	16	2	2

Average - 5.95 hours weekly

* None of the teachers reported between 11 and 14 hours spent in lesson preparations each week.

TABLE X

MEAN NUMBER OF PUPILS IN CLASSES FOR EACH SUBJECT

Subject	Number of teachers	Number of classes having the following average number of pupils as reported by teachers										
		2-7	8-13	14-19	20-25	26-31	32-37	38-43	44-49	50-55	56-61	62-
English	9		2	2	2	8	9	12	7			
Foreign Language	3		1	1	4	2	1	2	3			
Social studies	8			2	3	4	6	10	8			
Mathematics	7		2	1	6	7	8	5	9			
Commercial	3				1	4	6	2				
Physical education	5				4		3	10		4	2	2
Shops	6		2	6	13	4	2	2				
Music	3	2		1	2	3	1		3			2
Science	2			1		2	2	1	2			
Art	3		1	4	2							
Library	2	6		1	1	1	1					
Total	51	8	8	19	38	35	39	44	32	4	2	2
Per cent of total		3.4	3.4	8.2	16.3	15	16.7	18.8	13.7	1.7	.9	1.7

Median Class size - 33.2

All fifty-one of the teachers in the study held college degrees. Seventy and six tenths per cent of the teachers hold bachelor's degrees, while 29.4 per cent of the teachers have master's degrees.

Table VI presents data regarding the major and minor fields of college training and teaching areas. Ninety-two per cent of the teachers are teaching in fields in which they majored or minored in college, as indicated in Table VII. Eight per cent of the teachers were found to be teaching in areas for which they would be considered to be without special preparation. Sixty-eight and six tenths per cent of the teachers, as shown in Table VIII, are instructing in one teaching area. The remaining teachers are assigned to two teaching fields. None of the teachers is assigned to three or more discrete teaching fields.

A rather objective measure of teaching load is the amount of time devoted by teachers to the preparation and planning of lessons. Table IX indicates the range and distribution of time for such activities as reported in this study. The average time given to such duties was about six hours per week (or a little over an hour per school day).

Table X shows the range of pupils in classes for each of the subject fields reported in the study. Forty-six and three tenths per cent of the classes have less than

thirty-two pupils. Fifty-three and seven tenths per cent of the classes tabulated in Table X contain pupils in groups of 32 or more. Approximately four per cent of the classes have more than fifty pupils.

Another tangible measure of teaching load is the number of actual teaching periods per week. The load being carried by the secondary teachers, when described in terms of periods per week, is indicated in Table XI. The average number of teaching periods per week is 20.2, or just four periods per school day. Forty-three per cent of the teachers reported teaching 25 periods per week, or five periods per day. Only ten per cent of the teachers have fewer than twenty periods per week.

Table XII presents the number and percent of teachers whose classes involve weekly contacts with various numbers of junior and senior high school pupils. The median number of pupils taught weekly by the secondary school teachers who reported was 727. Approximately ten per cent of the teachers who cooperated have weekly contacts with 1,000 or more pupils. (These teachers are located in the junior high schools.) Twenty-one and five tenths per cent of the teachers in the three schools reported in the study have weekly contacts with fewer than five hundred pupils in their classes.

The number of teachers at each grade level who rated

TABLE XI

NUMBER OF TEACHING PERIODS PER WEEK

Subject	Number of teachers	Number of teachers having the following teaching periods per week										
		Less than 16	16	17	18	19	20	21	22	23	24	25	Average
English	9						3					6	23
Foreign language	3						2					1	22
Social science	8				1		5					2	21
Mathematics	7						5					2	21
Commercial	3	1										2	22
Physical education	5	3	1									1	15
Shops	6						1					5	24
Music	3	1						1				1	20
Science	2	1										1	20
Art	3	1					2						17
Library	2	1										1	18
Total	51	8	1		1		18	1				22	20.2
Percent of total		16	2		2		35	2				43	

TABLE XII

WEEKLY TEACHER-PUPIL CONTACTS IN
SANTA FE SECONDARY SCHOOLS

Total number of pupils taught weekly	Santa Fe		Harrington		Leah Harvey		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1200 or more			1	5.6			1	1.96
1100 - 1199			2	11.1			2	3.92
1000 - 1099					2	12.5	2	3.92
900 - 999					3	18.75	3	5.88
800 - 899	2	11.8	6	33.3	3	18.75	11	21.56
700 - 799	4	23.5	3	16.7	2	12.5	9	17.64
600 - 699	1	5.9	2	11.1	3	18.75	6	11.76
500 - 599	4	23.5	1	5.6	1	6.25	6	11.76
400 - 499	4	23.5	2	11.1	1	6.25	7	13.72
300 - 399	1	5.9	1	5.6	1	6.25	3	5.88
- 299	1	5.9					1	1.96
Total	17	100.	18	100.1	16	100.	51	100.

Median number of teacher-pupil contacts - 727.

Median number of teacher-pupil contacts - 727.

TABLE XIII

TEACHERS' JUDGMENTS AS TO REASONABLENESS OF PRESENT TEACHING LOAD

Grade level (1)	Number of Teachers (2)	Number Reasonable (3)	Number Heavy (4)	Per Cent Reasonable (5)	Per Cent Heavy (6)
Junior high school	34	28	6	82.4	17.6
Senior high school	17	12	5	70.6	29.4
Total	51	40	11	78.4	21.6

TABLE XIV

PERCENTAGE OF PROBATIONARY AND PERMANENT STATUS TEACHERS AS REPORTED BY TEACHER RESPONDENTS

Teaching status	Number of cases	Per Cent
Probationary	16	31
Permanent	35	69
Total	51	100

their present teaching loads in each of the two suggested categories, "reasonable" and "heavy", is shown in Table XIII. Included also are the percents, showing what proportion of the teachers rated their present loads either as reasonable or heavy. It is notable that nearly thirty per cent of the high school teachers, as revealed in column 6, rated their present loads as heavy. Approximately eighteen per cent of the junior high school teachers appraised their present loads as heavy. Altogether, 21.6 per cent of the teachers judged their loads as greater than a reasonable teaching load.

Table XIV shows the number and percent of instructors whose teaching status is either permanent or probationary. Nearly one-third of the teachers in the public secondary schools reported themselves as being in the probationary category. This indicates that many of them are comparatively new instructors.

It is shown in Table XV that teachers of foreign language and commercial subjects have loads closest to the average. The average load was computed to be 28.05 load units for all the teachers in the study. Art and music teachers have loads approximately twenty-six per cent below the average. Teachers of English have loads of about fourteen per cent above the average. Teachers of social studies, mathematics, and general science have loads that approximate seven per cent above the average. In spite of large classes,

teachers of physical education average 24.11 load units per week which is about four units under the average for all teachers.

Table XVI shows the range and distribution of the load units as computed for each teacher who cooperated in the study. The lowest load unit computation was 15.4 and the highest load unit score was computed to be 40.87. The median load unit was 28.05. This is approximately three units less than the median load reported by Douglass, which is 31.1.[43]

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43 Douglass, op. cit., p. 118, 1945 Edition.

TABLE XV

RANGE AND AVERAGE OF TEACHING LOADS
IN SUBJECT FIELDS

Subject	Range	Number of cases	Average of load units
English	27.3 to 36	8	32.02
Library	23.1 to 27.7	3	26.17
Physical education	17.08 to 32.49	3	24.11
Social studies	23.36 to 34.99	9	30.05
Art	20.4	1	20.4
Shops	22.84 to 25.8	3	25.48
Mathematics	21.56 to 40.87	10	29.7
Science	28.35 to 29.76	2	29.06
Foreign language	23.7 to 31.13	3	28.28
Home economics	22 to 27	3	23.85
Commercial subjects	25.36 to 31.46	3	28.2
Music	15.4 to 23.7	3	20.9

Total average - 28.05

TABLE XVI

TOTAL LOADS OF TEACHERS

Douglass units of total load	Number of Teachers					
	Santa Fe		Leah Harvey		Harrington	
	Men	Women	Men	Women	Men	Women
39 - 41	1					
36 - 38		1				
33 - 35	1	1	1		2	2
30 - 32	2	2	1	1		3
27 - 29	2	1	2	3	3	5
24 - 26	2		1	2	1	
21 - 23	1	2	2	1		1
18 - 20						1
15 - 17	1			1		
Total	10	7	7	9	6	12
Median*	28	30.25	27.25	25.75	28.5	28.9

* The median found for all figures relating to the Santa Fe secondary school teachers who cooperated in the study was computed according to the formula promulgated by J. P. Guilford, Fundamental Statistics in Psychology and Education, (New York: Mc-Graw-Hill Book Company, Inc., 1942), p. 36.

CHAPTER IV

THE DOUGLASS FORMULA

Selection of the formula. This section endeavors to reveal some of the facts which led to the selection of the Douglass formula for use in computing the teaching load of the teachers in the public secondary schools of Santa Fe.

When examined in chronological sequence over the past three decades, definitions of the term "teaching load" show marked changes in meaning and scope. progressing from the simple to the decidedly complex statements of recent years.

In 1917-18, as reported by Myers,[44] the United States Office of Education defined teaching load as "the number of pupils divided by the number of teachers". A typical statement of 1925 reads: "As the term is generally used it signifies the number of pupils times the number of weekly recitations or briefly, the pupil-periods".[45]

In 1932 Thomas[46] broadened teaching load so that it encompassed "the amount of time a teacher spends each week

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44 L. L. Myers, "Needed: An Objective Method of Determining Teacher Load," The Nation's Schools, 31:30-31, April, 1943.

45 John C. Almack and Albert R. Lang, Problems of the Teaching Profession (Boston: Houghton Mifflin Company, 1925).

46 Harold P. Thomas, "An Analysis of the Time Factors in the Distribution of School Duties," (Unpublished Doctor's Dissertation, Harvard, Boston, 1932).

in teaching and all activities connected with teaching.

A 1939 definition extended teaching load to include consideration of "the teacher as guide and interpreter of the educational experiences of pupils and a corresponding emphasis upon the quality of pupil-teacher relationships as a critical factor in personality"[47]. This growth from an elementary conception in which teaching load concerns itself only with mere pupil-teacher ratio to a broad, inclusive one that recognized its multiple components has not resulted in a haphazard manner. Rather, it is a concomitant of the reshaping of the current-day philosophy of secondary education and the improvement in the techniques of evaluation.

Almack and Bursch[48] suggested a method of measuring the teacher load which takes into consideration both the size of the class and the relative difficulty or subject-weight, as they termed it, by asking teachers to evaluate the difficulty of teaching different subjects. As a basis for comparison they used a class of thirty pupils in English composition. They assigned this a subject weight of 1.0, and asked each teacher to evaluate each subject on the same basis of thirty pupils. The subjects in the curriculum

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47 National Education Association Research Division, op. cit., p. 225.

48 Almack and Bursch, op. cit., p. 466.

as well as the extra-instructional activities made up the list. The weights assigned by the teachers were then averaged; this made the so-called subject-weights for the school. The number of pupils a teacher has in each activity is multiplied by its subject-weight and by the number of periods expressed in clock-hours. The sum of all the subject-loads of each teacher is that teacher's teaching load.

An acceptable formula for teaching load should weight the principal items objectively so that they contribute proportionately to the final index. The Douglass formula does this satisfactorily by mathematical methods, the result of which may be compared directly between teachers or departments or schools or with accepted norms. Further, it may be modified objectively by including special weight coefficients or other weights that administrators and teachers may accept as more equitable in their own schools.

The Cooperative Study of Secondary School Standards has attempted to measure in two different ways the teacher load of more than 4,500 teachers in two hundred representative secondary schools in every state of the United States.[49] In this study it was stated that the simplest and probably

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49 Cooperative Study of Secondary School Standards, op. cit., pp. 1-139.

the most widely used measure of the teacher is the pupil-teacher ratio. The teachers in a secondary school with 35 pupils to each teacher are presumably more heavily loaded than the teachers in a school having twenty pupils to each teacher. The chief virtue of this method of measurement is its simplicity and ease of computation. It has, however, two serious shortcomings.

The first is that it makes no allowances for differences in size of classes, differences in length of class periods, or for different degrees of responsibility for sponsorship of pupil activities, pupil guidance, study halls, and other non-classroom service.

The second is its lack of provision for comparing the teaching load of one teacher with that of another in the same school. Two teachers, in the same school, one teaching five classes a day, with responsibility for two or three after-school clubs, and the other teaching two sections of each of two different courses, with no pupil activity responsibility are obviously not operating under the same load even if they are in the same school. The importance of some of these factors, which are omitted from consideration in a simple pupil-teacher ratio , will be indicated below.

The second method of measuring teaching load that was used by the Cooperative Study is the Douglass formula. This

formula takes into account not only the number of pupils that each teacher meets during the week but the number of class periods of teaching, the number of those periods for which the preparation is different from that of any other period, the nature of the subject taught, the amount of time given to non-classroom activities (study halls, library, homerooms, pupil activities, administrative or supervisory activities, research activities, guidance and conferences) and the length of the classroom period. It gives a measure of the load of each teacher separately.

The Douglass formula has been widely used in studies of the teaching load. Myers presented a table of frequency of the appearance of thirty-six factors related to teaching load as found in the literature[50]. Suggesting eight factors as basic, he then rated a number of formulas as to which factors each considered. He declared that, insofar as a need for weighting the principal factors objectively is indicated, this was satisfactorily accomplished mathematically by the Douglass formula. The other formulas considered by Myers were those formulated by Abraham, Almack-Bursch, Harrington, Brown-Fritzemeier, Hutson, Woody-Bergman, and Sand.

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50 L. L. Myers, "Needed: An Objective Method of Determining Teacher Load," The Nation's Schools, 31:30-31 April, 1943.

Among the several educators who have recently used the Douglass formula in their studies are Odell[51], Nelson[52], and Irwin[53]. One of the most recent studies which used the Douglass formula was that by Crim[54]. These educators utilized the formula either in the original form or in a modified form.

The formula devised by Douglass is far from being perfect, but since it was offered after eight years of research, and is based upon the opinions of other leading educators, it seems the best means yet devised to measure the entire teacher load.

Critical comments on the Douglass formula. Although the Douglass formula has been widely used in studies of the teaching load, still it is not regarded as perfect. The chief objection to the Douglass formula has been the relative difficulty of computation.

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51 C. W. Odell, "Teacher Load in Illinois High Schools", National Association of Secondary School Principals, Bulletin Number 159, 33:91-94, January, 1949.

52 Thomas L. Nelson, "An Analysis of the Teacher Load Problem," California Journal of Secondary Education, Number 5, 20:281-285, May, 1945.

53 Leonard B. Irwin, "Equalizing Teacher Loads in the Secondary Schools," American School Board Journal, 112:27-29, February, 1946.

54 Kenneth J. Crim, "Teaching-Loads of Ohio High-School Teachers," Educational Research Bulletin, 28:141-8, Number 6, September 14, 1949.

Among the several educators who have recently used the Douglas formula in their studies are Odell[51], Nelson[52] and Irwin[53]. One of the most recent studies which used the Douglas formula was that by Cria[54]. These educators utilized the formula either in the original form or in a modified form.

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51 C. W. Odell, "Teacher Load in Illinois High Schools," National Association of Secondary School Principals Bulletin Number 136, 33:101-4, January, 1949.

52 Thomas L. Nelson, "An Analysis of the Teacher Load Problem," California Journal of Secondary Education, Number 5, 20:281-283, May, 1945.

53 Leonard R. Irwin, "Equalizing Teacher Loads in the Secondary Schools," American School Board Journal, 112:27-29, February, 1946.

54 Kenneth W. Cria, "Teaching-Loads of Ohio High-School Teachers," Educational Research Bulletin, 20:141-5, Number 5, September 14, 1941.

Pollack[55] analyzed and compared ten methods of computing teaching load to see which of the methods was best fitted to the use of busy administrators and supervisors. Eleven teachers and administrators ranked the methods. The methods were ranked on the basis of understandability, meaningfulness of results, and accuracy of load portrayal.

Pollack said that the Douglass formula was an

> ....ingenious, complicated method for arriving at a complicated answer to a complicated problem. The application of this formula gives accurate results, if we allow that the assumptions on which it is based are accurate. An inspection of the assumptions as set forth, however, will show that in spite of the fact that the author is a standard authority on the subject and that he has based his assumptions on data put forth in other studies, they are little better than intelligent guesses. This Douglass himself more or less implies when he says: 'These assumptions are not finely accurate nor truly objective.' Would it not then be simpler, since estimates are to be used anyhow, to make that estimate some all powerful coefficient that would include all the partial estimates, and thus save what would appear to be a rather burdensome calculation? This procedure would, of course, reduce this formula to one similar to any of the previous ones using subject-weight coefficients.

The Cooperative Study of Secondary School Standards[56] has developed a simplification in the computation of the Douglass formula. It claimed that this simplification made

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55 Richard S. Pollack, "A Comparative Study of Various Methods for Computing Teaching Load," (Unpublished Master's Thesis, Temple University, 1938).

56 Cooperative Study of Secondary School Standards, op. cit., pp. 72-74

Pollock[55] analyzed and compared ten methods of computing teaching load to see which of the methods was most fitted to the use of busy administrators and supervisors. Eleven teachers and administrators ranked the methods. The methods were ranked on the basis of understandability, meaningfulness of results, and accuracy of load computed.

Pollock said that the Douglass formula was an

> ....imaginative, computational method for arriving at a complicated answer to a complicated problem. The application of this formula gives accurate results if we allow that the assumptions on which it is based are accurate. An inspection of the assumptions is not futile, however, will show that in spite of the fact that the author is a numerical wizard, on the subject one that he can bound his assumptions on data put forth by school studies, they are little better than intelligent guesses. This lowers the dignity and at least implies that he says: "Made assumptions are not fully accurate nor truly conclusive. Could it not then be adopted, since results are so far apart anyway, to make what estimate seems? Powerful coefficient that would include all the pertinent estimates, and thus save time would appear to be a rather burdensome obligatory. This procedure would, of course, reduce this formula to one similar to any of the previous ones being a psychologically satisfactory.

The cooperative study of Secondary School Standards[56] has developed a simplification in the computation of the Douglass formula. It claimed that this simplification made

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55 Alonzo A. Pollock, "A Comparative Study of Various Methods for Computing Teaching Load," (Unpublished Ed.D. Thesis, Temple University, 1958).

56 Cooperative Study of Secondary School Standards, op. cit., pp. 72-74

it possible to compute the teaching load for an individual teacher, after the teacher has supplied the necessary data, in two or three minutes, by hand, or in one or two minutes if a computing machine was used.

Odell[57] was offered many suggestions by various workers in regard to the formula to use in his study. He selected the Douglass formula. He said that although certain inadequacies were apparent, it seemed to be the best formula that has received any considerable amount of use for computing the teaching load.

In suggesting a method of equalizing the teacher load, Irwin[58] utilized Douglass' formula, but in a slightly revised form. Douglass established an arbitrary set of subject coefficients. These coefficients are used in the formula to allow for the outside preparation and inherent difficulty in teaching one subject as compared to another. Irwin suggested that the Douglass formula be expanded in order to make it measure comparative loads more accurately. He believed that the administrator and teachers of a given school, working cooperatively, could develop a set of coefficients for extra-class activities similar to those used by Douglass for class subjects. The school staff could classify the various extra-instructional activities according

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57 Odell, op. cit., pp. 91-94.

58 Irwin, op. cit., p. 28.

to their inherent difficulties by taking the homeroom as a base. Irwin suggested that the final term in Douglass' formula be read as $\frac{PCC \cdot PC}{2}$, with PCC representing the appropriate pupil-coordination coefficient. Irwin said:

> If a teacher's load includes different types of activities, they would naturally be listed separately, each with its own coefficient. An intelligent faculty would accept such a device, if it were cooperatively arrived at, and even if it were made clear that the differentiation was being made on the basis of inherent difficulty and extent of nervous effort required, rather than on the grounds of any comparative educational value to the school. Such a plan is as reasonable for extra-curricular activities as for class subjects.

<u>Application of the formula</u>. The Douglass formula, which takes into consideration all the important measurable factors in teaching load, furnishes a measure in terms of "teaching load units". One unit is the theoretical equivalent of teaching one class of 20 pupils for a period of forty-five minutes in a subject which requires an average amount of preparation by the teacher.

This formula, with the addition of subject coefficients and for use in the high school, is as follows:

$$TL = SC \left[CP - \frac{2\ Dup}{10} + \frac{(NP - 20\ CP)}{100}\right]\left[\frac{PL + 55}{100}\right] + \frac{PC}{2}\left[\frac{PL + 55}{100}\right]$$

TL = Units of teaching load per week.

SC = Subject coefficient for differences in load between subjects.

CP = Class periods spent in classroom per week.

Dup = Number of class periods spent per week in teaching classes for which the preparation is very similar to that for some other section, but not including the original section.

NP = Number of pupils in classes per week.

PC = Number of class periods spent per week in supervision of a study hall, student activities, teachers' meetings, committee work, assisting in administrative or supervisory work, or other cooperations.

PL = Gross length of class periods in minutes.

The subject coefficients of the following subjects are: English, science, social studies, commercial law, and commercial geography, 1.1; foreign languages, mathematics, and commercial subjects, 1; all shop subjects, household arts, and art, .9; music and physical education, .8. These coefficients were offered by Douglass to investigators who desire to take cognizance of the factor of the difference in the amount of time required by different subjects.[58]

In case the teacher teaches more than one subject, the load for each subject should be computed separately, (omitting the term $\frac{PC}{2}$, then added, and the total multiplied by $\left[\frac{PL + 55}{100}\right]$, to which product $(\frac{PC}{2}) \times \left[\frac{PL + 55}{100}\right]$ is finally added.

In applying the formula to classes requiring no reading and no marking of written work (for example, physical education or music), the term pertaining to the number of

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58 Douglass, op. cit., 1932 edition, p. 120.

pupils should either be divided by 2 or, better still, be omitted entirely. In applying the formula to double-period classes in science, household arts, typewriting, art, and shop, the following procedure should be employed:

1. Count each double period as two class periods (CP).
2. Count the number of pupils for each half of double period (NP).
3. Count each double period as one unit of duplicate preparation over and above any other allowance made for duplicate preparation.[59]

Application of the formula may be illustrated by comparing the loads of two instructors in the same school as follows:

Teacher A		Teacher B	
English I	19 pupils	Algebra	14 pupils
English I	18 pupils	Algebra	15 pupils
English II	30 pupils	Geometry	21 pupils
English III	26 pupils	Mathematics III	8 pupils
English IV	20 pupils	History I	20 pupils
Study hall duty, 5 periods a week.		Study hall duty, 5 periods a week,	
Dramatics, Debate, and Journalism - 55 minutes a day.		Senior Advisor - 55 minutes a week.	

Class periods -- 55 minutes

$$TL\ (\text{Teacher A}) = 1.1\left[25 - \frac{2 \times 5}{10} + \frac{565 - 500}{100}\right]\left[\frac{55 + 55}{100}\right] + \frac{10}{2}\left[\frac{55 \times 55}{100}\right] = 35.33 \text{ units}$$

$$TL\ (\text{Teacher B}) = \left[1\left(20 - \frac{2 \times 5}{10} + \frac{290 - 400}{100}\right)\right] 1.1\left[\left(5 - 0 + \frac{100 - 100}{100}\right) + \frac{6}{2}\left[\frac{55 \quad 55}{100}\right]\right] = 29.04 \text{ units}$$

59 Ibid., p. 116.

Teacher A has been assigned a load 6.29 units, or 21.7 per cent greater than the load of Teacher B. The difference in load does not seem so great until a precise means of comparison is employed.

Assumptions and units involved in the formula. In the formula as given, the teaching load (TL) is furnished in units which have been described on pages 64 and 65.

The assumptions underlying the formula are as follows:

1. That in teaching two sections requiring practically identical preparation the amount of total work for the duplicate section in class and out is reduced approximately twenty per cent if the quality of preparation is held constant.

2. That the additional teaching load resulting from large sections may be expressed in terms of the teaching load incidental to one section of normal size by counting each 100 pupils met daily, in excess of a normal load of 20 pupils per section, as equal to the load resulting from teaching one section of normal size.

3. That two class periods spent in cooperations are equivalent to teaching for one day one section requiring normal preparation.

4. That increasing the length of the class period by five minutes is equivalent to increasing the teaching by one twentieth of a normal class with preparation for each period taught daily.[60]

These assumptions, in the works of Douglass, are not finely accurate or truly objective. They represent a compromise between the consensus of opinion of a number of

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60 Douglass, op. cit., 1932 edition, pp. 117-118.

groups of graduate students made up of experienced teachers and principals and such studies as undertaken by Koos and Brownell and reported earlier in this study.

However, it should be quite clear that the use of the formula will yield much more accurate and reliable measures of teaching loads than to take as criteria either the number of classes taught or the number of pupils taught, neither of which takes direct cognizance of the other; and both of which disregard the saving in preparation ascribed to duplicate sections, the time expended in cooperations, and the differences in the length of the class period. It is also maintained that the assumptions are in all probability approximating upon the truth, and that the formula will yield estimates that are as accurate and valid for ordinary administrative and supervisory purposes as many formulas upon which important estimates and decisions are made in the industrial and commercial world, if not more so.

Junior high school formula. Douglass has also evolved a formula for use in the junior high school. This formula, as that for the high school, furnishes a measure in terms of "teaching load units". One unit is the equivalent of teaching one class of 30 pupils for a period of 45 minutes in a subject which requires an average amount of preparation by the teacher.

The formula, in the form recommended for use in the junior high school, is as follows:[61]

$$TL = SC\left(CP - \frac{2\ Dup}{10} + \frac{NP - 30CP}{100}\right)\left(\frac{PL + 50}{100}\right) + \frac{2PC}{3}\left(\frac{PL + 50}{100}\right)$$

The lettered terms, including the subject coefficients, are identical to those employed in the formula for use in computing the load of a high school teacher. A few of the numbered terms are slightly different, however.

Where a junior high school teacher may teach subjects in two or more subject fields, the load for each field, using the subject coefficient accorded to the subject field, should be computed separately (omitting the term $\frac{2PC}{3}$). These should then be added and the total multiplied by $(\frac{PL + 50}{100})$, to which product $(\frac{2PC}{3} \times \frac{PL + 50}{100})$ is finally added.

61 William T. Gruhn and Harl R. Douglass, The Modern Junior High School, (New York: The Ronald Press Company, 1947), p. 431.

CHAPTER V

JUNIOR HIGH SCHOOL TEACHER'S LOADS

The number of junior high schools participating in the study is two. They are both situated well within the confines of the city limits of Santa Fe. Leah Harvey Junior High School is located in the northwestern part of the city, while Harrington Junior High School is in the southeastern portion. Leah Harvey is several city blocks closer to the Plaza, around which are some of the city's leading business centers, than Harrington.

Leah Harvey junior high school loads. The teacher loads of each teacher in the Leah Harvey Junior High School are listed below with most of the components relating to the factors which are employed in the Douglass formula.

Teacher Number 1
Subjects taught, library and English
Subject coefficients, .8 and 1.1 (Library assumed to be .8)
Number of class periods taught per week, 25
Number of duplicate preparations per week, 0
Number of pupils taught per week, 175
Number of sixty-minute periods spent in extra-instructional activities, 15
Teaching load equals 27.77

Teacher Number 2
Subjects taught, physical education and English
Subject coefficients, 1.1 and .8
Number of class periods taught per week, 13
Number of duplicate preparations per week, 6
Number of pupils taught per week, 880

Number of sixty-minute periods spent in extra-
instructional activities, 7
Teaching load equals 17.08

Teacher Number 3
Subject taught, social studies
Subject coefficient, 1.1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 15
Number of pupils taught per week, 810
Number of sixty-minute periods spent in extra-
instructional activities, 16
Teaching load equals 27.66

Teacher Number 4
Subjects taught, social studies and physical education
Subject coefficients, 1.1 and .8
Number of class periods taught per week, 18
Number of duplicate preparations, 10
Number of pupils taught per week, 653
Number of sixty-minute periods spent in extra-
instructional activities, 12
Teaching load equals 23.36

Teacher Number 5
Subjects taught, art and English
Subject coefficients, .9 and 1.1
Number of class periods taught per week, 20
Number of duplicate preparations, 10
Number of pupils taught per week, 470
Number of sixty-minute periods spent in extra-
instructional activities, 8
Teaching load equals 20.37

Teacher Number 6
Subject taught, shops
Subject coefficient, .9
Number of class periods taught per week, 25
Number of duplicate preparations, 15
Number of pupils taught per week, 725
Number of sixty-minute periods spent in extra-
instructional activities, 9
Teaching load equals 22.84

Teacher Number 7
Subjects taught, mathematics and algebra
Subject coefficient, 1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10

Number of pupils taught per week, 965
Number of sixty-minute periods spent in extra-instructional activities, 8
Teaching load equals 28.51

Teacher Number 8
Subject taught, social studies
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 1000
Number of sixty-minute periods spent in extra-instructional activities, 10
Teaching load equals 29.35

Teacher Number 9
Subjects taught, English and drama
Subject coefficient, 1.1 (drama is assumed to be 1.1)
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 940
Number of sixty-minute periods spent in extra-instructional activities, 19
Teaching load equals 32.5

Teacher Number 10
Subjects taught, English and music
Subject coefficients, 1.1 and .8
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 845
Number of sixty-minute periods spent in extra-instructional activities, 11
Teaching load equals 23.7

Teacher Number 11
Subject taught, Spanish
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 5
Number of pupils taught per week, 625
Number of sixty-minute periods spent in extra-instructional activities, 15
Teaching load equals 23.71

Teacher Number 12
Subject taught, mathematics
Subject coefficient, 1
Number of class periods taught per week, 25

Number of duplicate preparations per week, 10
Number of sixty-minute periods spent in extra-instructional activities, 13
Number of pupils taught per week, 955
Teaching load equals 28.4

Teacher Number 13
Subjects taught, mathematics and physical education
Subject coefficients, 1 and .8
Number of class periods taught per week, 19
Number of duplicate preparations, 5
Number of pupils taught per week, 789
Number of sixty-minute periods spent in extra-instructional activities, 16
Teaching load equals 26.2

Teacher Number 14
Subject taught, home economics
Subject coefficient, .9
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 540
Number of sixty-minute periods spent in extra-instructional activities, 14
Teaching load equals 22.55

Teacher Number 15
Subject taught, English
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 1,025
Number of sixty-minute periods spent in extra-instructional activities, 47
Teaching load equals 33.49

Teacher Number 16
Subject taught, general science
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 845
Number of sixty-minute periods spent in extra-instructional activities, 13
Teaching load equals 29.76

Teacher Number one was assigned the responsibility of keeping the school library in efficient working order.

Ordinarily, school library sessions are held for studying or finding referential materials. It was stated in Organization and Administration of Secondary Schools[62] that where the teacher does little reading or marking of papers, the term $\frac{NP - 30CP}{100}$ should be divided by two or omitted entirely. As the amount of reading and clerical work are above the ordinary, and the number of pupils is usually large, the librarian often has to help the pupils find sources of information. In addition, Teacher Number 1 has small classes in library science. The subject coefficient of .8 was attached arbitrarily to this teacher's library program.

Teacher Number 9 has among his classes, one in drama. Drama, as a subject, is not often offered as a curricular activity. Douglass did not award a subject coefficient to this seldom offered curricular subject. According to his reasoning, drama as a subject requires much reading on the part of the teacher, therefore, the coefficient of one was given to this subject arbitrarily. Drama is closely allied with literature, if not actually one with it.

The teaching loads as found for the faculty members of the Leah Harvey Junior High School range from 17.1 to 33.5.

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62 Douglass, op. cit., 1932 edition, p. 116.

The median load was computed to be 26.5. This is a difference of 4.6 units from the median teaching load as given by Douglass. The Douglass norms are as follows: upper quartile, 34.4; median, 31.1; and lower quartile, 28.2 [63]. The difference in the upper quartile scores as computed from Douglass' norms and the school's score is 5.9 units. Whereas, Douglass and Leah Harvey's lower quartile scores register a difference of 4.4 units.

The percentages for the top four intervals of the distribution in Table XVII shows that 28.6 per cent of the men teachers and eleven per cent of the women teachers have 30 or more units of total load. These percentages indicate a somewhat heavier comparative load for men teachers than for women teachers. Table XVI also shows that the median total load of the men teachers is 1.5 units larger than that of the women teachers. This difference in total load serves to emphasize the fact that, among the teachers of Leah Harvey Junior High School, the men teachers have the heavier loads.

Table XVIII shows the number of class periods, number of pupils, and number of duplicate preparations for each teacher. These data are used in the computation of the teacher loads.

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63 Douglass, op. cit., 1945 edition, p. 118.

TABLE XVII

PERCENTAGE OF TEACHERS TEACHING
VARIOUS LOADS

Teaching load	Percentage of teachers					
	Santa Fe		Leah Harvey		Harrington	
	Men	Women	Men	Women	Men	Women
39 - 41	10					
36 - 38		14.3				
33 - 35	10	14.3	14.3		33.3	16.7
30 - 32	20	28.5	14.3	11.1		25
27 - 29	20	14.3	28.5	33.3	50	41.7
24 - 26	20		14.3	22.2	16.7	
21 - 23	10	28.5	28.5	11.1		8.3
18 - 20				11.1		8.3
15 - 17	10			11.1		
Total	100	99.9	99.9	99.9	100	99.9

TABLE XVII

PERCENTAGES OF TEACHERS TEACHING
VARIOUS LOADS

Teaching load	Percentages of teachers					
	Santa Fe		Leah Harvey		Harrington	
	Men	Women	Men	Women	Men	Women
32 - 41	10					
26 - 32		14.3				
22 - 26	10	14.3	14.3		33.3	16.7
20 - 22	20	28.6	14.3	11.1		25
27 - 29	20	14.3	28.5	33.3	50	41.7
24 - 26	20		14.3	22.2	16.7	
21 - 23	10	28.6	28.5	11.1		8.3
18 - 20				11.1		8.3
15 - 17	10			11.1		
Total	100	99.9	99.9	99.9	100	99.9

TABLE XVIII

CLASS PERIODS AND DUPLICATE PREPARATIONS PER WEEK

Teacher	Class periods	Number of pupils	Duplicate preparations
1	5	175	0
2	13	880	15
3	20	810	15
4	18	653	10
5	20	470	10
6	25	725	15
7	25	965	10
8	25	1,000	15
9	25	940	15
10	25	845	10
11	20	625	5
12	25	955	10
13	19	789	5
14	25	540	10
15	25	1,025	10
16	25	845	10
17	20	840	10
18	20	845	15
19	21	1,031	4
20	20	765	10
21	20	895	5
22	20	902	3
23	20	670	10
24	20	855	15
25	25	875	20
26	20	435	5
27	16	844	3
28	25	730	10
29	20	470	5
30	20	685	10
31	20	820	15
32	15	535	5
33	25	1,790	0
34	20	780	15
35	30	690	15
36	20	410	10
37	25	490	5
38	25	620	5
39	25	860	10
40	25	775	15
41	25	725	15
42	25	440	15
43	20	475	10
44	25	780	15
45	15	335	0
46	25	525	15
47	25	860	15
48	25	575	10
49	15	455	10
50	29	140	23
51	25	727	20

Harrington junior high school loads. The teacher load components of the Harrington Junior High School teachers, when inserted in the Douglass formula, give the following results:

Teacher Number 17
Subject taught, mathematics
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 10
Number of pupils taught per week, 840
Number of sixty-minute periods spent in extra-instructional activities, 23
Teaching load equals 28.42

Teacher Number 18
Subject taught, English
Subject coefficient, 1.1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 15
Number of pupils taught per week, 845
Number of sixty-minute periods spent in extra-instructional activities, 33
Teaching load equals 29.46

Teacher Number 19
Subject taught, music
Subject coefficient, .8
Number of class periods taught per week, 21
Number of duplicate preparations per week, 4
Number of pupils taught per week, 1,031
Number of sixty-minute periods spent in extra-instructional activities, 22
Teaching load equals 23.52

Teacher Number 20
Subject taught, Spanish
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 10
Number of pupils taught per week, 765
Number of sixty-minute periods spent in extra-instructional activities, 35
Teaching load equals 27.63

Teacher Number 21
Subjects taught, algebra and mathematics
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 5
Number of pupils taught per week, 895
Number of sixty-minute periods spent in extra-instructional activities, 28
Teaching load equals 30.05

Teacher Number 22
Subjects taught, algebra and physical education
Subject coefficients, 1 and .8
Number of class periods taught per week, 20
Number of duplicate preparations per week, 3
Number of pupils taught per week, 902
Number of sixty-minute periods spent in extra-instructional activities, 48
Teaching load equals 35.5

Teacher Number 23
Subject taught, mathematics
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 10
Number of pupils taught per week, 670
Number of sixty-minute periods spent in extra-instructional activities, 28
Teaching load equals 25.6

Teacher Number 24
Subject taught, social studies
Subject coefficient, 1.1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 15
Number of pupils taught per week, 855
Number of sixty-minute periods spent in extra-instructional activities, 35
Teaching load equals 33.08

Teacher Number 25
Subject taught, English
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 20
Number of pupils taught per week, 875
Number of sixty-minute periods spent in extra-instructional activities, 30
Teaching load equals 32.7

Teacher Number 26
Subject taught, homemaking
Subject coefficient, .9
Number of class periods taught per week, 20
Number of duplicate preparations per week, 5
Number of pupils taught per week, 435
Number of sixty-minute periods spent in extra-instructional activities, 20
Teaching load equals 22

Teacher Number 27
Subjects taught, physical education and health
Subject coefficients, .8 and 1 (Health is assumed to be 1)
Number of class periods taught per week, 16
Number of duplicate preparations per week, 3
Number of pupils taught per week, 844
Number of sixty-minute periods spent in extra-instructional activities, 12
Teaching load equals 32.49

Teacher Number 28
Subject taught, shops
Subject coefficient, .9
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 730
Number of sixty-minute periods spent in extra-instructional activities, 9
Teaching load equals 25.8

Teacher Number 29
Subjects taught, social studies and art
Subject coefficients, 1.1 and .9
Number of class periods taught per week, 20
Number of duplicate preparations per week, 5
Number of pupils taught per week, 470
Number of sixty-minute periods spent in extra-instructional activities, 32
Teaching load equals 28.25

Teacher Number 30
Subjects taught, social studies and Spanish
Subject coefficients, 1.1 and 1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 10
Number of pupils taught per week 685
Number of sixty-minute periods spent in extra-instructional activities, 36
Teaching load equals 28.87

Teacher Number 31
Subject taught, social studies
Subject coefficient, 1.1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 15
Number of pupils taught per week, 820
Number of sixty-minute periods spent in extra-instructional activities, 29
Teaching load equals 34.99

Teacher Number 32
Subject taught, general science
Subject coefficient, 1.1
Number of class periods taught per week, 15
Number of duplicate preparations per week, 5
Number of pupils taught per week, 535
Number of sixty-minute periods spent in extra-instructional activities, 26
Teaching load equals 28.35

Teacher Number 33
Subject taught, library
Subject coefficient, .8 (library is assumed to be .8)
Number of class periods taught per week, 25
Number of duplicate preparations per week, 0
Number of pupils taught per week, 1,790
Number of sixty-minute periods spent in extra-instructional activities, 18
Teaching load equals 27.7

Teacher Number 34
Subject taught, English
Subject coefficient, 1.1
Number of class periods taught per week, 20
Number of duplicate preparations per week, 15
Number of pupils taught per week, 780
Number of sixty-minute periods spent in extra-instructional activities, 21
Teaching load equals 27.31

Teacher Number 27 has health classes. The subject coefficient of one was assigned to the subject of health, as Douglass does not list any for health classes. This subject should not be granted the subject coefficient of .8. Physical education, as a subject, does not require much

reading and paper marking. Hence, the subject coefficient of 1.0 for this subject was arbitrarily inserted in the computation of the teaching load for Teacher Number 27. Health, in a way, resembles science, particularly physiology, and this is another cause for having the subject coefficient of 1.0 attached in this instance.

Teacher Number 33 has classes in library. Her subject coefficient was accorded to be that of .8 for the same reason as outlined for Teacher Number 1 on pages 75 and 76 of this study.

The range of the teaching load in the Harrington Junior High School is from 20.2 to 35. The median load is 29.3. One and eight tenths units was revealed as the difference between the Douglass median and the Harrington teacher's median. In comparing the upper quartile score of Douglass' teaching load norms and that of the Harrington teachers, which are 34.4 and 32.0, respectively, one finds the difference to be 2.4 units. At the other end of the quartile scale, 28.2 in the Douglass' norms and 27.25 in the Harrington's group, the difference is .95 of a unit.

The percentages for the top four intervals of the distribution in Table XVII show that 33.3 per cent of the men teachers and 41.7 per cent of the women teachers have thirty or more units of total load. At the same time, however, 16.6 per cent of the women have teaching loads of

23 or less while none of the men have loads of less than 24. There is little difference in the median; that for women being .4 of a unit larger than that for men as shown in Table XVI.

Combined teacher loads of the junior high schools. The combined teacher load units of the junior high schools range from 17.1 to 35. The median load is 28; the upper quartile, 30.36; and the lower quartile, 24.3. These scores, when compared with corresponding Douglass norms, show differences as follows: upper quartile, -4.09; median, -3.1; and lower quartile, -3.9. There is a closer agreement between the median scores than between any of the other two quartile scores. In combining the junior high school teacher loads, it was found that the Harrington Junior High School's faculty members possessed larger load units than their colleagues at Leah Harvey Junior High School. The differences in each of their respective quartile categories, first, second, and third, are 3.45, 2.8, and 3.5, respectively, with Harrington having the larger load units in each instance.

Summary. There are two junior high school faculties included in the study. The distribution of the teacher load ranges from 17.1 to 33.5 in Leah Harvey Junior High School. There is a difference of 4.6 load units between the

23 or less while none of the men have loads of less than 14. There is little difference in the median; that for women being .4 of a unit larger than that for men as shown in Table XVI.

Combined teacher loads of the junior high schools.

The combined teacher load units of the junior high schools range from 17.1 to 36. The median load is 23; the upper quartile, 30.35; and the lower quartile, 24.5. These scores, when compared with corresponding quartile scores, show differences as follows: upper quartile, -6.05; median, -3.1; and lower quartile, -3.5. There is a closer agreement between the median scores than between any of the other two quartile scores. In combining the junior high school teacher loads, it was found that the Harrington Grade School's faculty members possessed the heaviest load units when their colleagues at Lock Ha very junior high school. The differences in each of their respective quartile categories, first, second, and third, are 3.45, 2.8, and 5.5, respectively, with Harrington having the larger load units in each instance.

Summary. There are two junior high school faculties included in the study. The distribution of the teacher load ranges from 17.1 to 36.8 in Lock Haven's junior high school. There is a difference of 6.8 load units between the

junior high school's median load and Douglass' median, which are 26.5 and 31.1 respectively. In these two groups, the first and third quartile differences are 5.9 and 4.4 units, with the quartile scores of Douglass being the larger. The men teachers of Leah Harvey tend to have slightly heavier total loads than the women teachers at the same school.

Harrington Junior High School's teaching load ranges from 20.2 units to 35 units. The median load is 29.3. There is a difference of 1.8 units between Douglass' median and the junior high school teachers' median load in this school. The first and third quartile scores of Douglass' norms and those of the junior high schools in this study indicate, respectively, differences of .95 and 2.4 units. This signifies that Harrington's quartile scores are more nearly similar to those of the Douglass norms than the scores possessed by Leah Harvey. There is, however, almost a complete reversal of the roles occupied by the teachers of both sexes, as far as comparative loads are concerned, in both Leah Harvey and Harrington junior high schools. In the latter school, it is the women teachers who carry the heavier teaching loads. The men teachers at Leah Harvey, as shown above, carry the heavier loads. The teachers at Harrington, on the whole, have a heavier load than those at Leah Harvey.

CHAPTER VI

SENIOR HIGH SCHOOL TEACHER'S LOADS

Along with the two junior high schools taking part in the study is the Santa Fe High School. There are no other public secondary schools in Santa Fe. Santa Fe High School is situated across the street from Leah Harvey Junior High School. Where the entire faculty memberships of both junior high schools had responded to questionnaires pertaining to the study, only 49 per cent of the high school instructors returned replies to the questionnaires. This part of the study is concerned only with the teaching loads of those high school teachers who returned their questionnaires with written replies.

A breakdown of the factors and components, supplied by the high school teachers and used in computing the teaching load of each teacher, is presented herewith:

Teacher Number 35
Subjects taught, mathematics and physical education
Subject coefficients, 1 and .8
Number of class periods taught per week, 30
Number of duplicate preparations, 15
Number of pupils taught per week, 690
Number of sixty-minute periods spent in extra-instructional activities, 46
Teaching load equals 40.87

Teacher Number 36
Subjects taught, algebra and geometry
Subject coefficient, 1
Number of class periods taught per week, 20
Number of duplicate preparations, 10

Number of pupils taught per week, 410
Number of sixty-minute periods spent in extra-instructional activities, 9
Teaching load equals 21.56

Teacher Number 37
Subject taught, homemaking
Subject coefficient, .9
Number of class periods taught per week, 25
Number of duplicate preparations per week, 5
Number of pupils taught per week, 490
Number of sixty-minute periods spent in extra-instructional activities, 18
Teaching load equals 27

Teacher Number 38
Subjects taught, English, drama and speech
Subject coefficients, 1.1 and 1 (speech and drama are assumed to be 1)
Number of class periods taught per week, 25
Number of duplicate preparations per week, 5
Number of pupils taught per week, 620
Number of sixty-minute periods spent in extra-instructional activities, 22
Teaching load equals 36

Teacher Number 39
Subjects taught, typing and shorthand
Subject coefficient, 1
Number of class periods taught per week, 25
Number of duplicate preparations, 10
Number of pupils taught per week, 860
Number of sixty-minute periods spent in extra-instructional activities, 14
Teaching load equals 31.46

Teacher Number 40
Subjects taught, bookkeeping and typing
Subject coefficient, 1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 775
Number of sixty-minute periods spent in extra-instructional activities, 24
Teaching load equals 27.78

Teacher Number 41
Subject taught, English
Subject coefficient, 1.1

Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 725
Number of sixty-minute periods spent in extra-instructional activities, 17
Teaching load equals 30.44

Teacher Number 42
Subjects taught, crafts and mechanical drawing
Subject coefficient, .9
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils per week, 440
Number of sixty-minute periods spent in extra-instructional activities, 12
Teaching load equals 24.76

Teacher Number 43
Subjects taught, history and athletics
Subject coefficients, 1.1 and .8
Number of class periods taught per week, 20
Number of duplicate preparations per week, 10
Number of pupils taught per week, 550
Number of sixty-minute periods spent in extra-instructional activities, 36
Teaching load equals 32.9

Teacher Number 44
Subject taught, physical education
Subject coefficient, .8
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 780
Number of sixty-minute periods spent in extra-instructional activities, 12
Teaching load equals 22.77

Teacher Number 45
Subject taught, Music
Subject coefficient, .8
Number of class periods taught per week, 15
Number of duplicate preparations per week, 0
Number of pupils taught per week, 335
Number of sixty-minute periods spent in extra-instructional activities, 12
Teaching load equals 15.4

Teacher Number 46
Subject taught, Spanish
Subject coefficient, 1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 525
Number of sixty-minute periods spent in extra-instructional activities, 30
Teaching load equals 30

Teacher Number 47
Subject taught, English
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 15
Number of pupils taught per week, 860
Number of sixty-minute periods spent in extra-instructional activities, 26
Teaching load equals 34.28

Teacher Number 48
Subjects taught, algebra and geometry
Subject coefficient, 1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 10
Number of pupils taught per week, 575
Number of sixty-minute periods spent in extra-instructional activities, 17
Teaching load equals 28.33

Teacher Number 49
Subject taught, business mathematics
Subject coefficient, 1
Number of class periods taught per week, 15
Number of duplicate preparations per week, 10
Number of pupils taught per week, 455
Number of sixty-minute periods spent in extra-instructional activities, 32
Teaching load equals 25.36

Teacher Number 50
Subjects taught, library and art
Subject coefficient, .9 (library is assumed to be .9)
Number of class periods taught per week, 29
Number of duplicate preparations per week, 23
Number of pupils taught per week, 140
Number of sixty-minute periods spent in extra-instructional activities, 11
Teaching load equals 23.1

Teacher Number 51
Subject taught, history
Subject coefficient, 1.1
Number of class periods taught per week, 25
Number of duplicate preparations per week, 20
Number of pupils taught per week, 725
Number of sixty-minute periods spent in extra-instructional activities, 14
Teaching load equals 31.98

Teacher number 38 has classes in English, speech and drama. Douglass has not mentioned any subject coefficient for either the speech or drama courses. However, drama and speech, being closely intertwined as far as fused subjects go, are basically a part of English. Both drama and speech require much reading and marking of themes. They may safely be said to lack the same enormity of work that English requires and so the subject coefficient of one was used for each of these two subjects in the computation of the teaching load of Teacher Number 38.

Teacher Number 50 has classes in art and library. The library classes are known as classes in library science. These are organized classes and not haphazard student gatherings devoted to finding materials for students' classroom work. Library science, as a subject, is not as highly organized as a class in, say, biology. Nevertheless, library science is a technical field in itself and it demands a great amount of reading on the part of the teacher. In going along with Douglass' reasoning in regard to the amount of reading or paper marking, the subject coefficient

of .9 was used in the case of library science. This coefficient was used in arriving at the teaching load of Teacher Number 50.

The teacher loads in the Santa Fe High School, as computed from the usable questionnaires returned by high school teachers, range from 15.4 to 40.87. The median load is 28.17. This indicates a difference of 2.93 load units when compared with the median of Douglass' norms. The differences in the upper and lower quartile scores between those of the high school and the norms reported by Douglass are 2.15 and 3.45 load units, respectively. The high school's scores are less than the scores established by Douglass.

Table XVII shows that about fifty-seven per cent of the women teachers have 30 or more units of teaching load. Forty per cent of the men teachers were found to have total loads equal to or more than 30 load units. The median load for the women, as indicated in Table XVI, is 2.25 units greater than that for the men. The percentages and medians indicate that, of the seventeen high school instructors, women tend to have heavier instructional loads than do the men; and this in spite of the fact that a male high school teacher was reported to have a teaching load of 40.87, which is the highest load computed in the survey.

of .9 was used in the case of literary science. This coefficient was used in arriving at the teaching load of teacher number 20.

The teacher loads in the Santa Fe High School, as computed from the weekly questionnaires returned by high school teachers, range from 2.4 to 4.8. The median load is 3.17. This indicates a difference of 1.38 load units when compared with the median of Douglass' norms. The difference in the upper and lower quartile scores between those of the high school and the norms reported by Douglass are 2.12 and 1.15 load units, respectively. The high school's scores are less than the scores established by Douglass.

Table XVII shows that about fifty-seven per cent of the women teachers have 30 or more units of teaching load. Forty per cent of the men teachers were found to have total loads equal to or more than 30 load units. The median load for the women, as indicated in Table XVI, is 3.48 units greater than that for the men. The percentages and medians indicate that, of the seven men high school instructors, women tend to have heavier instructional loads than do the men, and this in spite of the fact that a male high school teacher was reported to have a teaching load of 40.8%, which is the highest load reported in the survey.

CHAPTER VII

COMBINED TEACHER LOADS OF THE SCHOOLS

The total instructional loads of the teachers run from a low load of 15.4 to a high one of 40.87 in all three schools. Table XIX portrays the loads of the fifty-one teachers in the study. Thirty-five and seven tenths per cent of the women teachers and 34.7 per cent of the men teachers have loads that are equal to 30 units or more. The percentage of teachers in the three schools having loads of less than 27, which is close to the first quartile norm reported by Douglass, are: women, 32.1; men, 34.7. The median load of all the men teachers is 28, while that for women teachers is 28.17. The third quartile scores of the two sexes are: women, 31.0; men, 31.8. It is interesting to note that the men and women teachers have nearly identical medians and third quartiles. In the matter of the first quartile point, the men teachers have one of 24.8 and the women, 23.5. These figures tend to show that the men and women teachers in the three schools are very nearly evenly matched in the distribution of teaching loads on the whole. In fact, there is no significant difference in the matter of teaching loads as between men and women. Table XX shows the distribution of the teachers' total loads according to sex.

CHAPTER VII

COMBINED TEACHER LOADS OF THE SCHOOLS

The total instructional loads of the teachers run from a low load of 18.4 to a high one of 40.87 in all three schools. Table XIX portrays the loads of the fifty-one teachers in the study. Thirty-five and seven tenths per cent of the women teachers and 54.7 per cent of the men teachers have loads that are equal to 30 units or more. The percentage of teachers in the three schools having loads of less than 27, which is close to the first quartile norm reported by Douglass, are: women, 32.1; men, 34.7. The median load of all the men teachers is 30, while that for women teachers is 28.17. The third quartile scores of the two sexes are: women, 33.0; men, 31.6. It is interesting to note that the men and women teachers here nearly identical medians and third quartiles. In the matter of the first quartile point, the men teachers have one of 24.8 and the women, 23.8. These figures tend to show that the men and women teachers in the three schools are very nearly evenly matched in the distribution of teaching loads on the whole. In fact, there is no significant difference in the matter of teaching loads as between men and women. Table XX shows the distribution of the teachers' total loads according to sex.

TABLE XIX

TEACHERS' LOAD IN SANTA FE
PUBLIC SECONDARY SCHOOLS

Teacher	Load
1	27.77
2	17.08
3	27.66
4	23.36
5	20.4
6	22.84
7	28.51
8	29.35
9	32.5
10	23.7
11	23.71
12	28.4
13	26.2
14	22.55
15	33.49
16	29.76
17	28.42
18	29.46
19	23.52
20	31.13
21	30.05
22	35.5
23	29.09
24	33.08
25	32.7
26	22.0
27	32.49
28	25.8
29	28.25
30	28.87
31	34.99
32	28.35
33	27.7
34	27.31
35	40.87
36	21.56
37	27.0
38	36.0
39	31.46
40	27.78
41	30.44
42	24.76
43	32.9
44	22.77
45	15.4
46	30.0
47	34.28
48	28.33
49	25.36
50	23.1
51	31.98

Median load - 28.05

TABLE XX

TEACHER LOAD BY SEX

Load	Men		Women	
	Number	Per Cent	Number	Per Cent
39 - 41	1	4.3		
36 - 38			1	3.6
33 - 35	4	17.4	3	10.7
30 - 32	3	13	6	21.4
27 - 29	7	30.4	9	32.1
24 - 26	4	17.4	2	7.1
21 - 23	3	13	4	14.3
18 - 20			2	7.1
15 - 17	1	4.3	1	3.6
Totals	23	99.8	28	99.8
Median	28.0		28.17	
First Quartile	24.81		23.5	
Third Quartile	31.75		31.0	

Comparison with the Douglass norms. Table XXI shows the differences between Douglass' norms and the teacher load in the Santa Fe schools studied. The differences tend to indicate that the teachers in the Santa Fe secondary school system have teaching loads which are less than the average as shown in the norms published by Douglass. When data for the three schools are combined it appears that the teaching load in the schools under consideration is between three and four units less than the Douglass norms.

TABLE XXI

COMPARISON OF TEACHER LOAD WITH DOUGLASS NORMS

	Upper Quartile	Median	Lower Quartile
Douglass' norms	34.4	31.1	28.2
Santa Fe Schools	30.78	28.05	24.43
Difference	3.62	3.05	3.77

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary. There have been numerous methods devised which attempt to measure the teaching load in the secondary schools. In most of the early studies, the authors considered the number of periods taught per day, the number of pupils taught per day, and the length of the class period. Little thought was given to the many extra-class activities which are directly connected with teaching and require much of the teacher's time. In late years the picture has been changing with educators beginning to gradually devise plans to evaluate extra-instructional activities on the same basis of relative difficulty as instructional activities.

Authorities now agree that time spent in extra-instructional activities, the degree of difficulty in subject instruction, and the amount of duplicate preparation definitely affect the teacher's load.

Many studies on the teacher's load have been made with the results measured in pupil clock hours. Authorities agree that this measure fails in its purpose because it does not take into consideration the degree of difficulty in teaching different subjects or the number of duplicate preparations made by the teacher.

In the Douglass formula these factors are considered.

Although it is true that some things that should be included are not considered, authorities agree that it is the most satisfactory method yet devised for measuring the teacher's load.

Variation in the definition of a teacher and in the methods employed in determining the pupil-teacher ratio make difficult any accurate comparison of the results of many studies. Some standardization in this process, or at least clear definitions and explanations in each study, would afford a better basis for comparison and make it possible to interpret more accurately the findings of each study.

All of the teachers who participated in the questionnaire poll had a bachelor's degree, and fifty-five per cent of these had work beyond that degree. Twenty-nine per cent of these teachers had master's degrees. All except two teachers had previous teaching experience. Ninety-two per cent of the teachers were teaching in their major or minor field of preparation.

It was found that the so-called average teacher had devoted an average of almost six hours to the preparation and planning of lessons weekly.

The median number of pupils in classes is 33.2 and the average is 31.

The average teacher conducts classes for approximately

Although it is true that some things that should be included are not considered, authorities agreed that it is the most satisfactory method yet devised for measuring the teacher's load.

Variation in the factual information gathered and in the methods employed in determining the multi-teacher ratio make difficult any accurate comparison of the results of many studies. Some standardization in this procedure, or at least clear definitions and explanations in each study, would afford a better basis for comparison and make it possible to interpret more accurately the findings of each study.

All of the teachers who participated in the questionnaire poll had a bachelor's degree, and fifty-five per cent of them had only bachelor's degrees. Twenty-nine per cent of these teachers had another degree. All except two teachers had previous teaching experience. Ninety-two per cent of the teachers were teaching in their major or minor field of preparation.

It was found that the so-called average teacher had devoted an average of almost six hours to the preparation and planning of lessons weekly.

The median number of pupils in classes is 30.8 and the average is 31.

The average teacher considers itself approximately

twenty periods each week, or four periods per day. The median number of pupils contacted by the teachers is 727 per week. This roughly amounts to 145 pupils per day. Twenty-nine per cent of the high school teachers rated their teaching loads as being heavy, whereas eighteen per cent of the junior high school teachers described their loads in the same manner. Sixty-nine per cent of the teachers in the three schools reported their teaching status as permanent and thirty-one per cent of the teachers stated that they are teaching on the probationary basis. Forty-eight teachers had duplicate preparation.

The teaching loads of the Leah Harvey Junior High School teachers range from 17.1 to 33.5. Harrington Junior High School teachers have loads ranging from 20.2 to 35. The men teachers of Leah Harvey were shown to have slightly heavier teaching loads than their feminine colleagues at this school. The situation at Harrington Junior High School is reversed. At this school it was found that women teachers carry slightly heavier teaching loads than do the men. The teaching loads of Harrington Junior High School are closer to Douglass' norms than those of Leah Harvey Junior High School. Of the two junior high schools, the teachers at Harrington have heavier teaching loads, comparatively speaking, than those at Leah Harvey.

The teaching loads in the Santa Fe High School

twenty periods each week, or four periods per day. The median number of pupils contacted by the teachers is 72 per week. This roughly amounts to 14.4 pupils per day. Twenty-nine per cent of the high school teachers rated their teaching loads as being heavy, whereas eighteen per cent of the junior high school teachers indicated that it is in the same manner. Sixty-nine per cent of the teachers in the three schools reported their teaching duties as permanent and thirty-one per cent of the teachers stated that they are teaching on the probationary basis. Forty-eight teachers had duplicate preparation.

The teaching loads of the Lamb Harvey Junior High School teachers range from 17.1 to 32.5. Harrington Junior High School teachers have loads ranging from 8.4 to 32. The men teachers in both schools were found to have definitely heavier teaching loads than their feminine colleagues at this school. The situation at Harrington Junior High School is reversed. At this school it was found that women teachers carry slightly heavier teaching loads than do the men. The teaching loads of Harrington Junior High School are lighter to begin with than those of Lamb Harvey Junior High School. Of the two junior high schools, the teachers at Harrington have heavier teaching loads, comparatively speaking, than those at Lamb Harvey.

The teaching loads in the Santa Fe High School

range from 15.4 to 40.87. The median load was found to be 29. The women teachers at the high school have heavier instructional loads than the men teachers, the difference being 2.25 load units, or eight per cent.

Conclusions. The findings tend to show that there is not much significant dissimilarity in the distribution of teaching loads among the teachers of the two sexes.

The teaching loads as computed from the data reported by the teachers in this study are somewhat less than the norms established by Douglass.

Within each school there is considerable inequality in the load carried by the several teachers.

Leading authorities recommend that teachers' maximum loads be less than thirty Douglass units. It is apparent that the teaching loads of approximately thirty-five per cent of the teachers included in this study are heavy in terms of the recommendations of these authorities.

Recommendations. On the basis of the facts presented in this report, it is recommended that, in so far as possible, administrators make every effort to set a maximum teaching-load of thirty Douglass units in order to avoid the excessively heavy loads that are revealed in this study. Also, that administrative efforts be made to lessen the range of teaching-load within a given school by considering

not only the extremely heavy loads but also the very light loads. It is also recommended that the discrepancies in teaching load be recognized and that steps be taken by the school administrators to equalize, or make more equitable, the teaching-loads of the teachers in each of the schools represented in this study.

Studies of the related aspects of teaching load continue to employ both objective and subjective techniques, and continued research and experimentation employing such techniques is recommended.

The problem of teaching load involves both financial administration and personnel administration. Adequate school funds are essential if class size and pupil loads are to be confined to reasonable limits. This also points up the desirability of promoting wholesome personal relationships and of making suitable personnel adjustments to the total teaching situation. Consequently, the accomplishment of a satisfactory solution of such teaching load problems would seem to be that of local analysis of load problems followed by the establishment of policies and standards through friendly staff discussion in the typical democratic way.

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APPENDIX

637 Chavez Place
Santa Fe, New Mexico
December 10, 1949

Dear Teacher:

Your co-operation is sought in a study of the teacher-load of secondary school instructors in Santa Fe. Your kindness in supplying complete facts called for in the following pages will be greatly appreciated.

The writer is interested in securing facts relative to this problem with the hope of throwing light upon the status of teachers in Santa Fe with respect to their teaching load. Of course, this investigation will have no influence in the alteration of any load.

The data secured from this questionnaire are to be utilized as source material for a thesis and will have no official connection with the Santa Fe public school system. This letter and the accompanying questionnaire have the approval of the College of Education at the University of New Mexico.

A self-addressed and stamped envelope is enclosed for your convenience. If you wish me to send you the summary of my findings, please indicate by checking this item: yes, send me a summary _____ .

Your name will not be used anywhere in the study.

I hope that you will find it possible to help me with the survey.

Sincerely yours,

Robert Clingenpeel

QUESTIONNAIRE

Name of teacher Mr. / Mrs. / Miss _____

Name of School _____

I Experience:

1. Number of years you have taught _____ years.

2. In how many fields are you now teaching? _____

3. Are you now teaching subjects in which you majored or minored in your college training? _____ yes; _____ no. (Check one)

4. Employment status of teacher: probationary ( ); permanent ( ); substitute ( ). (Check one)

II Training:

1. How many hours of college work have you completed? Semester _____ Quarter _____

2. What degree or degrees do you now hold? _____

3. If you have only a Bachelors degree, how many hours of graduate work have you completed beyond the Bachelors degree? Semester _____ Quarter _____

4. What was your major subject in college? _____

5. What were your minor subjects in college? _____

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December 10, 1940

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3. If you have only a Bachelors degree, how many hours of graduate work have you completed beyond the Bachelors degree? Semester _____ Quarter _____

4. What was your major subject in college? _____

5. What were your minor subjects in college? _____

III Sources of Load Pressure:

*1. Number of duplicate classes you have _____

2. Number of hours spent weekly in preparation _____

3. Number of hours spent weekly marking papers _____

4. Hours of guidance duties spent per week outside of the homeroom _____

5. Hours in extra-class activities (committees, groups, chairmanships, in-service training meetings, Parent-Teacher Association, youth and professional organization spent per week _____

**6. Do you consider your teaching load unduly heavy? _____ yes; _____ no. (Check one)

* Duplicate classes are those with dissimiliar personnel but the preparation for which is very similiar.

** The teaching load is the sum total of all the work required by the employer of the teacher, either expressed or implied. that that teacher must do in order to keep his position and to remain in good standing excepting only these activities in which the teacher engages because of personal desire or need or for professional advancement.

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D.T.

IMPORTANT!

Special care should be taken to prevent loss or damage of this volume. If lost or damaged, it must be paid for at the current rate of *typing.*