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Subject Combinations Prevalent in the Teaching Programs of Teachers in New Mexico High Schools

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SUBJECT COMBINATIONS PREVALENT IN THE TEACHING
PROGRAMS OF TEACHERS IN NEW MEXICO
HIGH SCHOOLS

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By

Joseph H. Nylander

A Thesis

Submitted in partial fulfillment of the
Requirements for the Degree of
Master of Arts in Education

University of New Mexico
1937

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MASTER OF ARTS

George F. Hammond
DEAN

June 5, 1937
DATE

8/1/37 Butler 1.10

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This report, prepared and reviewed by the Committee on
Internal Security, was approved by the Committee on the
Internal Security of the Senate on the 15th day of
January, 1954.

WALTER D. HALL

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Acknowledgements

A thesis based on a questionnaire for data necessarily implies wide cooperation. The writer is indebted to the New Mexico high schools as listed in the appendix. The response indicates a wholesome interest by secondary superintendents and principals in the solution of educational problems of the state.

The willing assistance of Dr. Diefendorf of the College of Education of the University of New Mexico with the questionnaire and in other helpful advice has been indispensable. Such cooperation from the Department of Education in the University itself is a great stimulus to anyone desiring the solution of a problem. The encouragement of Dr. Nanninga, Dean of the College of Education of the University of New Mexico, has likewise meant much to the furtherance of this study.

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CHAPTER I

STATEMENT OF THE PROBLEM

The purpose of this investigation was to reveal the frequency of the various subject combinations for each of the high school subject fields taught in the state.

In relation to this study we may specifically list the following problems:

1. What are the various subject combinations taught by teachers in New Mexico secondary schools?
2. Which combinations appear most frequently and do they tend to persist?
3. To what extent do New Mexico principals and teachers teach a single subject?
4. In the opinion of principals and superintendents which combinations are difficult to fill, but quite desirable for practical purposes.
5. Are New Mexico high school teachers as a whole carrying an unsatisfactory load of unrelated subjects in combinations?
6. Does the 1937 list of graduates in the College of Education of the University of New Mexico indicate that prospective teachers have been trained in relation to the subject combinations in the state high schools?
7. Are subject combinations related to the size of the high school?

Importance of the study. It has been aptly said that teachers may be properly employed, over-employed,

CHAPTER 1

THE PURPOSE OF THE STUDY

The purpose of this study was to determine the

frequency of the various subject matter items in the

high school subject matter items in the state.

In relation to this study the following items

the following problems

1. How many items were included in the study?

2. How many items were included in the study?

3. How many items were included in the study?

4. How many items were included in the study?

5. How many items were included in the study?

6. How many items were included in the study?

7. How many items were included in the study?

8. How many items were included in the study?

9. How many items were included in the study?

10. How many items were included in the study?

Therefore it was stated

that teachers may be provided with information

under-employed, misemployed, unemployed, or unemployable.¹ One frequent cause for most of these conditions is the inappropriate training of teachers. Not infrequently a teacher finds herself well trained for teaching in a combination of subjects for which there is little or no demand. On the other hand she may find herself misemployed because her major training is not appropriate to the subject she is obliged to teach. Such a teacher is surely misemployed, and in some cases would be better unemployed. In common with other maladjustments of the law of supply and demand there is no panacea to correct such a condition among teachers and their prospects of employment.

However, it should be obvious that a knowledge of the demand for teachers qualified in certain subject combinations would be of material assistance to teachers in the selection of their major and minor courses while in training. This in turn would enhance their opportunity, not only for employment, but also for a wider choice of localities. It is possible for the teacher to select her preparation on a basis of ease of achievement rather than on a basis of the demand likely to be in her future teaching. To obtain teachers who have the proper training has also been a problem to superintendents. College placement offices with a more scientific knowledge

¹ E. E. Lewis, Personnel Problems of the Teaching Staff (New York and London: The Century Company, 1926), p. 214.

of their particular state's normal school demand for the various subject combinations should be in better position to advise teachers in training. That such guidance is within the responsibility of the college placement office is supported by the following statement.

Placement is but one of the important steps in a guidance program. The school of education is responsible for seeing that individuals properly trained and otherwise qualified are satisfactorily placed in educational service. To assume this responsibility means that the school is sensitive to the needs of education in giving professional training and that the candidate has been influenced by the guidance of the school in selecting and preparing for certain types of educational activity. If the school has had reason to question the advisability of a certain kind of training for a given individual and the individual has persisted in going counter to the guidance given, the school's responsibility is lessened.²

It may seem unnecessary to some that the combination of subjects should be studied for New Mexico inasmuch as some twenty-one states have had similar studies which in general show the teaching combinations to be quite similar. However, it must be remembered that there is always a possibility of the development of a peculiar trend in the demand for teachers within a given state. Such trends might arise from the presence of bilingual populations, from special economic conditions in the state, or even from past cultural

² Whit Brogan, The Work of Placement Offices in Teacher Training Institutions, p. 89 n, citing: O. F. Mathiason, "Guidance and Placement in University Graduate Schools of Education," (Harvard University Doctor's Thesis, 1927, unpublished.)

of their practice. The committee has been very anxious to advise teachers in the field. The committee is within the responsibility of the committee. It is supported by the committee.

Education is the most important thing in life. It is the only way to get ahead. It is the only way to get a good job. It is the only way to get a good education. It is the only way to get a good life. It is the only way to get a good future. It is the only way to get a good world. It is the only way to get a good everything.

It is very important to have a good education. It is very important to have a good job. It is very important to have a good life. It is very important to have a good future. It is very important to have a good world. It is very important to have a good everything.

However, it must be remembered that there is a limit to the ability of the individual. It is not possible for everyone to be a genius. It is not possible for everyone to be a millionaire. It is not possible for everyone to be a world leader. It is not possible for everyone to be a world conqueror. It is not possible for everyone to be a world ruler.

2. The first of the committee's report is that the committee has been very anxious to advise teachers in the field. The committee is within the responsibility of the committee. It is supported by the committee.

backgrounds as in the case of the New England states.

Definitions and delimitations. This study makes no attempt at comparison other than the figures given in the discussion under "Related Studies." "Subject Fields" refers to the grouping of subjects as listed under "Procedure." This arrangement is common to most studies and is in most part the grouping as given in the State High School Directory.³ The premise of the subject grouping is that the individual subject listed in the particular subject field is a subject which a teacher trained in the general subject field could reasonably be expected to know. In the cases of arts and crafts, physiology, printing, guidance, psychology and supervision no attempt has been made to place them in any subject field, as they either do not technically belong in any particular field, or they are special fields of teaching skills. Each of these subjects also when left ungrouped is an interesting side-light on the occurrence of special provisions for pupil needs in the state high schools. Languages likewise were left separate to indicate the predominance of Spanish in that field.

In a number of cases certain teachers were listed as part-time or WPA teachers. In this study three classes were

³ J. W. Diefendorf, High School Directory 1929-1930 (New Mexico, Santa Fe: State Superintendent of Public Instruction, 1930), p. 6.

set as a minimum for counting a teacher in the high school program. This limit represents fifty per cent or more of a regular full-time teacher's work which is usually five or six daily classes. Exception to the above rule was made in the cases of superintendents or principals who teach. One or more classes taught by these school officials was counted as a program, if carried through two semesters. Superintendents and principals were grouped together inasmuch as there are few superintendents who teach in cases of schools employing both. New Mexico high school teachers, it should be remarked, are necessarily few in number, due to the fewer and smaller high schools in the state as compared with other states of greater population.

The schools were arbitrarily divided into four classes: I, enrollment 1 to 75; II, enrollment 76 to 150; III, enrollment 151 to 300; IV, enrollment 301 and over. This is, generally speaking, the class grouping adopted by Ferris, Gaunmits and Brammell in their monograph on smaller secondary schools of the United States.⁴ This grouping seems quite logical for size distribution of New Mexico high schools, and its use facilitates comparisons between this study and those of a similar nature that have been made

⁴ Ferris, Gaunmits, Brammell, The Smaller Secondary Schools (Bulletin No. 17, Monograph 6, Washington, D. C.: U. S. Government Printing Office, 1932), p. 1.

previously. The North Central Association method of grouping schools was found unsuited to the New Mexico schools inasmuch as most of the high schools would fall into the two lower groups.

previously. The first central location for the
schools was the one situated in the city of
as most of the high schools would still be in the
group.

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CHAPTER II

REVIEW OF RELATED STUDIES

A questionnaire used by Koos and Woody¹ in connection with a study of the training of high school teachers in Washington revealed the number of teachers who taught from one to seven subjects. Percentage, number of single subjects and combinations of two subjects were also discussed.

Teacher employment agencies evidently recognize the necessity of proper subject field preparation for prospective teachers. The Western Reference and Bond Association, Kansas City, Missouri, in an advertising leaflet entitled "Teacher Demand and Supply" are quoted by Kezer as follows:

For many years we have been studying the question of Teacher Demand and Supply. We know what employers of teachers want. We know which subjects offer the best teaching future, financially. Why not prepare to meet this demand? Study our records and then consult the head of your teacher training department.²

¹ L. V. Koos, and C. Woody, "The Training of Teachers in the Accredited High Schools of the State of Washington," Eighteenth Yearbook of the National Society for the Study of Education (Part I, 1919), pp. 213-257.

² C. L. Kezer, Subject Combinations in High School Teachers' Programs in Oklahoma (Special Series Bulletin, No. 1, Vol. 25, Oklahoma, Stillwater: Oklahoma Agricultural and Mechanical College, January 1928), pp. 5,6.

RESEARCH ON THE EFFECTS OF

A questionnaire was sent to 100 teachers in 1950 with a study of the teaching of high school mathematics. The results revealed the number of teachers who felt that the teaching of mathematics should be more practical and less theoretical. The results also showed that the majority of teachers felt that the teaching of mathematics should be more practical and less theoretical. The results also showed that the majority of teachers felt that the teaching of mathematics should be more practical and less theoretical.

For many years we have been studying the effects of teaching mathematics in the high school. The results of our study have shown that the majority of teachers feel that the teaching of mathematics should be more practical and less theoretical. The results also showed that the majority of teachers felt that the teaching of mathematics should be more practical and less theoretical.

I. J. K. and J. K. J. are the authors of the study. The study was conducted in the Department of Mathematics at the University of California, Los Angeles. The study was published in the Journal of Mathematical Education in 1952.

The study was conducted in the Department of Mathematics at the University of California, Los Angeles. The study was published in the Journal of Mathematical Education in 1952. The study was published in the Journal of Mathematical Education in 1952.

Dr. Kirby³ analyzed 1,478 programs of teachers in Iowa high schools. Combinations and dominance of the first three subjects were shown.

Peterson,⁴ in considering teacher supply and demand in Iowa, showed combinations and dominance of the first three subjects. He also showed the distribution of high school teachers in various sizes of cities in relation to subject fields taught and the training of teachers in comparison to subjects taught.

Anderson⁵ analyzed the programs of inexperienced teachers in the high schools of Ohio for the years 1927-28 and 1928-29 and gave one table which shows the subject combinations and single subject teaching of this group of beginning teachers.

Buckingham⁶ of Ohio arranged tables showing combinations of subjects distributed in relation to their first and second subjects. Distribution of newly appointed teachers

³ Thomas J. Kirby, "Subject Combinations in High School Teachers' Programs," School Review (September 1926), pp. 494-505.

⁴ E. T. Peterson, "Teacher Supply and Demand in Iowa," University of Iowa Studies in Education (No. 2, Vol. VII, Iowa City Bureau of Publications: 1932), pp. 151-165.

⁵ E. W. Anderson, "Combination of Subjects," Educational Research (Ohio, Columbus: Ohio State University, May 29, 1929), pp. 234-238.

⁶ B. R. Buckingham, "Supply and Demand in Teacher Training" (Bureau of Educational Research. Ohio, Columbus: Ohio State University. 1926), pp. 87-121.

Dr. Kirby³ analyzed 1,473 teachers of mathematics in
low high schools. Comparisons were made of the
three subjects were shown.

Peterson,⁴ in comparing teachers' ratings of
low, showed comparisons and comparisons of the three
subjects. He also showed the effect of high school
teachers in various areas of their ratings of subjects
fields taught and the ratings of teachers in mathematics
subjects taught.

Anderson⁵ analyzed the programs of mathematics
teachers in the high schools of Ohio for the years 1921-22
and 1922-23 and gave one table which shows the subjects
taught and the subjects taught of high school
beginning teachers.

Brinkman⁶ of Ohio examined ratings of mathematics
of subjects distributed in relation to the
second subject. A comparison of the ratings of the

³ Thomas L. Kirby, "Level of Mathematics in
School Teachers' Ratings," *Journal of Educational Research*, 1925,
pp. 494-505.

⁴ E. Peterson, "Teacher Ratings and Ratings in
University of Iowa, in *Journal of Educational Research*, 1925,
pp. 1-12.

⁵ W. W. Anderson, "Mathematics in Schools," *Journal of
Educational Research*, 1925, pp. 125-135.

⁶ W. W. Brinkman, "Rating and Rating in
Training" (*Journal of Educational Research*, 1925), pp. 1-12.

was given in relation to their majors and minors as undergraduates. A comparison was made of the most frequent major and minor study combinations. This study was incidental to research on supply and demand in teacher training in Ohio.

Hutson⁷ in a study of high school teacher's training in Minnesota in 1921-22 showed the great variety of subjects taught by different teachers and also the two leading subjects in combinations.

Pannell⁸ in discussing the work of Alabama high school teachers in 1933 showed the distribution of rural and city high school teachers according to both the number of subjects taught and according to the subjects they teach. Percentages and numbers of subjects taught singly and in combination were shown also, as was training in relation to subjects taught.

Nelson⁹ made a study of subject combinations in teachers' programs in small secondary schools in New York State. The technique used in the tables for showing the combinations is especially effective, inasmuch as the

⁷ P. W. Hutson, The Training of High School Teachers of Minnesota (Education Monograph, No. 3, University of Minnesota: December 10, 1923), Chapter II B.

⁸ H. C. Pannell, The Preparation and Work of Alabama High School Teachers (Teacher's College Columbia University, No. 551, New York City: Bureau of Publications, 1933). 125 pp.

⁹ M. G. Nelson, "Subject Combinations in the Programs of Teachers in Small Secondary Schools in New York State," School Review (June 29, 1929. Illinois, Chicago), pp. 426-32.

relative order of the subjects in combination with other subjects is shown. The number of times the subject appears as a subject not in combination was recorded in the same table. Similar tables were used in a study of Missouri high schools as reported by Carpenter and Ruff.¹⁰

A review of forty-six studies of the combinations of subjects taught by high school teachers was summarized by F. E. Henzlik¹¹ but, unfortunately, this study does not state clearly whether or not combinations are persistent from state to state. However, the general implication of his conclusions is that but few of the combinations have become standardized.

A survey of the combinations of the states given in this bibliography indicates that the following combination of subjects occurs quite frequently in the order named:

English with social science, language, library, home economics, mathematics and commerce.

Social science with English, mathematics, science, commerce, language and physical education.

Mathematics with science, social science, language, English and commerce.

¹⁰ W. W. Carpenter, and John Ruff, The Teacher and Secondary-School Administration (Texas, Dallas: Ginn and Company, 1931), p. 123.

¹¹ F. E. Henzlik, "Subject Matter Preparation of Secondary School Teachers," The North Central Association Quarterly (Vol. IX. April 1935, pp. 396-402). Citing Professor E. F. Potthoff of the University of Illinois.

relative order of the subjects in each of the two series is shown.

The number of subjects in each series is shown in the table.

Subjects not in each series are reported in the same table.

Similar results were obtained in the two series.

as reported by the subjects in the two series.

A series of subjects in the two series.

Subjects in the two series were reported in the same table.

E. K. Jensen, Jr., University of California, Berkeley, California.

clearly whether or not each subject in the two series.

to state. However, the number of subjects in each series.

is that the number of subjects in each series is shown in the table.

A series of subjects in the two series.

this difference in the number of subjects in each series.

subjects in the two series were reported in the same table.

English with subjects in the two series.

economic, social, and political subjects.

social science with subjects in the two series.

commerce, language and political subjects.

Mathematics with subjects in the two series.

English and commerce.

English and commerce.

English and commerce.

English and commerce.

English and commerce.

English and commerce.

Science with mathematics, social science, physical education, home economics and English.

Physical education with science, social science, mathematics, home economics, language, commerce and English.

Commerce with mathematics, science, social science and English.

Music with English, social science, language and commerce.

Home economics with English, science, social science, physical education and mathematics.

Education with mathematics, social sciences, physical

education, home economics and English

Physical education with science, social sciences,

mathematics, home economics, language, commerce and English

Commerce with mathematics, science, social sciences

and English

Music with English, social sciences, language and

commerce

Home economics with English, science, social sciences

physical education and mathematics

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END OF CONTENT

CHAPTER III

SOURCES OF THE DATA

The subject combinations found in teachers' programs were taken directly from the daily programs of New Mexico high schools. These were obtained by means of the letter of inquiry shown in the appendix. No selection of schools was made, and all the 161 high schools in the state were sent this letter of inquiry.

Parochial schools were also included in this report, as there seems no reason why they should not be regarded as typical of public schools of the state. Their inclusion has appreciably increased the number or sampling of the schools.

Only forty-one programs for 1935-36, and thirty-one for 1934-35 were received. This of course, leaves much to be desired in the matter of sampling.

Only one large high school failed to reply. Inasmuch as large schools rarely have combinations of subject fields in a teacher's program, as Table XVII of the appendix shows, the study would not be appreciably affected thereby. No studies were found comprising a complete list of high school teachers' programs. Indeed it is quite impossible to obtain such full data.

The number of schools represented in this study is 102. The number of teachers whose programs were analyzed is 586. The number of schools for which no programs were available is

fifty-six, representing approximately 150 teachers' programs. These represent, in general, schools with enrollments of seventy-five or less.

The number of schools in each class in the state is as follows: I, 89; II, 36; III, 22; IV, 14. The following are the percentages of schools reporting: Class I, 50 per cent; Class II, 72 per cent; Class III, 90 per cent; Class IV, 92 per cent. Class II and III schools perhaps are more indicative of the persistent subject combinations than either class I or IV which represent extremes of enrollment. Especially in the case of class I schools with less than seventy-six enrollment, it is true that combinations are quite fluctuating, depending on such factors as the subjects the principal or superintendent chooses to teach and the necessary year by year subject alternations to meet curriculum needs with a limited number of teachers.

The list of 1937 graduates with their major and minor studies was tabulated directly from the list at the University of New Mexico.

CHAPTER IV

PROCEDURE

The tables used in this study were modeled after the tables used in other subject combination studies. This practice was adopted in order to facilitate comparisons with the results of similar studies elsewhere. Because of the unlimited number of subject combinations this study follows the usual practice, also, of grouping science subjects such as chemistry, physics, biology and zoology under the head of "science." There seems to be no advantage in giving the science subjects separately because of the similarity of technique involved and because of the considerable overlapping of content. With the combinations that principals consider hard to fill included, any specific science-subject need should manifest itself at once. It should be noted, also, that particular science courses such as physics and chemistry, alternate with each other year after year in the smaller high schools. No doubt this alternation takes place in New Mexico high schools, since the majority of them are small as the figures on page 13 show.

Other subjects are grouped in major fields as shown in the following list:

The tables used in this study were prepared by the

tables used in other studies and were prepared by the

practice was adopted in previous studies and was

the results of similar studies of science, and

unlimited number of subject coefficients and

the usual method, also, of subject coefficients and

as chemistry, physics, biology and history and

"science." There seems to be no general

science subjects especially known in the

techniques involved and because of the

of content. With the combination of

hard to fill in, any specific subject

should manifest itself in detail

that particular science content seems to be

alternate with each other when

schools. No doubt the distinction

high schools, also the subjects of

figures on page 13 show.

Other subjects are given in the

in the following list:

- I. Agriculture
 - 1. Vocational
 - 2. Regular
- II. Art
 - 1. Drawing
 - 2. Painting
- III. Arts and Crafts
 - 1. Weaving, spinning
 - 2. Dyeing, tanning
 - 3. Native crafts
- IV. Commercial courses
 - 1. Bookkeeping
 - 2. Typewriting
 - 3. Shorthand
 - 4. Commercial geography
 - 5. Commercial law
 - 6. Commercial arithmetic
 - 7. Business English
 - 8. Salesmanship
- V. English
 - 1. Composition
 - 2. English and American literature
 - 3. Public speaking
 - 4. Dramatics and debate
 - 5. Journalism
 - 6. Bible
- VI. French
- VII. Guidance
 - 1. Vocational
 - 2. Educational
- VIII. Home Economics
 - 1. Domestic art, sewing
 - 2. Domestic science and cooking
- IX. Latin

I. Agriculture

1. Cereals

2. Horticulture

II. Art

1. Painting

2. Sculpture

I

III. Arts and Crafts

1. Textiles

2. Leather

3. Metalwork

IV. Commercial Subjects

1. Bookkeeping

2. Typewriting

3. shorthand

4. Commercial Geography

5. Commercial Law

6. Commercial Arithmetic

7. Business English

8. Business Letters

V. English

1. Composition

2. English and Literature

3. English Grammar

4. Literature and Language

5. Journalism

6. Notes

VI. French

VII. German

1. Vocabulary

2. Grammar

VIII. Home Economics

1. Domestic Art, Sewing

2. Domestic Science and Hygiene

IX. Latin

- X. Library
- XI. Manual Arts
 - 1. Manual training
 - 2. Mechanical drawing
 - 3. Auto mechanics
- XII. Mathematics
 - 1. Algebra
 - 2. Geometry
 - 3. General mathematics
 - 4. Trigonometry
- XIII. Music
 - 1. Glee club
 - 2. Chorus
 - 3. Band
 - 4. Voice *Orchestra?*
- XIV. Physiology
 - 1. Physiology
 - 2. First aid
(Not grouped with science in order to show stress on health education throughout state.)
- XV. Physical Education
- XVI. Printing
(Requires special training other than manual arts.)
- XVII. Science
 - 1. General Science
 - 2. Physics
 - 3. Chemistry
 - 4. Biology
 - 5. Botany
 - 6. Zoology
- XVIII. Social Studies
 - 1. All courses in history
 - 2. Civics and citizenship
 - 3. Economics
 - 4. Sociology
- XIX. Spanish

X.	Library
XI.	Manual Arts
	1. Manual training 2. Mechanical drawing 3. Auto mechanics
XII.	Mathematics
	1. Algebra 2. Geometry 3. General mathematics 4. Trigonometry
XIII.	Music
	1. Glee club 2. Chorus 3. Band 4. Voice
XIV.	Physiology
	1. Physiology 2. First aid (Not grouped with science in order to show stress on health education throughout state.)
XV.	Physical Education
XVI.	Printing
	(Requires special training other than manual arts.)
XVII.	Science
	1. General Science 2. Physics 3. Chemistry 4. Biology 5. Botany 6. Zoology
XVIII.	Social Studies
	1. All courses in history 2. Civics and citizenship 3. Economics 4. Sociology
XIX.	Spanish

In common with other studies no emphasis was placed on combinations of more than three subjects as it is obviously impossible for a teacher to make adequate preparation in more than three subject fields. Some studies show dominance of the particular subject and others do not. It was felt unnecessary in this study in view of the other material supplied, and also because of the even amount of time given to most of the subjects in the combinations.

The teaching combination tables which follow combine the best or most appropriate of the Iowa, Alabama and New York subject-combination studies, and, with modifications, are copies of the same. The arrangement or order, as far as can be determined, is unique to this study as is the attempt to show subject combination persistence. It is well to observe here that each state study has a technique of its own although essential outcomes are quite uniform.

Table XI showing desirable and hard-to-obtain subject combinations based on the opinion of New Mexico principals and superintendents is also unique to a study of this kind if the several studies on hand are indicative of the others. This table indicates state needs in teacher preparation beyond what is possible to show by deductions from the other tables.

It seems well to re-emphasize here that the prime purpose of this study is to record only aspects of the problem

In common with other studies the subjects were given combinations of more than three subjects and it was impossible for a subject to give adequate responses to more than three subjects. Some studies of combinations of the particular subject and others have not been made. In this study in view of the other material available, some data because of the even amount of the subjects were of the subjects in the combinations.

The teaching combinations indicated for the subjects the best or most appropriate of the two. Although the New York subject-combinations were not made, with combinations are copies of the same. The same was of other subjects can be determined. It seems to this study as to the subjects to show subject combinations were made. It is well to observe here that each subject was given a list of his own although essential to answer the other subjects.

Table XI shows the combinations of the subjects and combinations based on the subjects. The subjects and superintendents in this study were given the list of the several studies and the instructions of the subjects. This table indicates what is possible to be done by the subjects beyond what is possible to be done by the subjects. The subjects.

It seems well to be mentioned here that the purpose of this study is to determine the nature of the problem.

which not only can be readily interpreted but which can also be of practical use to teachers, employers, employment agencies, and teacher-guidance directors. While quantity of presentation has been avoided no lack of essential recording has been spared.

In outline form the purpose and order of the tables are as follows:

Tables I to V

Distribution of principals on basis of:

1. Size of school and number of subjects taught.
2. Names of single subjects and number of times they appear in combinations of two and three subjects.
3. Names and numbers of single subjects and combinations they appear in.

Tables VI to IX

Distribution of teachers on basis of:

1. Size of school and number of subjects taught.
2. Names of single subjects and number of times they appear in combinations of two and three subjects.
3. Names and numbers of single subjects and combinations they appear in.

Table X

Comparison of 1936-37 subject combinations with those of 1935-36 and 1934-35.

Table XI

Comparison of superintendents' reports on desirable combinations and qualified graduates for same in the 1937 class of the University of New Mexico.

Table XII

Comparison of qualified 1937 college of education graduates with potential positions in New Mexico schools.

which not only can be directly interpreted but which also
be of practical use to teachers, librarians, and
also, and teacher-librarians. This quantity of
presentation has been avoided no longer, especially in
has been given.

In outline form the research has been
are as follows:

Tables I to V

Distribution of principal subjects

1. Size of school and number of subjects
2. Names of subjects and number of subjects
3. Names of subjects and number of subjects
4. Names of subjects and number of subjects
5. Names of subjects and number of subjects

Tables VI to X

Distribution of subjects on units of

1. Size of school and number of subjects
2. Names of subjects and number of subjects
3. Names of subjects and number of subjects
4. Names of subjects and number of subjects
5. Names of subjects and number of subjects

Table XI

Comparison of 1933-34 school year with
of 1933-34 school year

Table XII

Comparison of 1933-34 school year with
of 1933-34 school year

Table XIII

Comparison of 1933-34 school year with
of 1933-34 school year

Tables XIII to XVI (appendix)

Distribution of various subjects taught in high schools
by size of school and frequency of combinations.

Table XII to XVI (continued)

Distribution of persons by sex and age by size of school and type of institution

DO NOT

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CHAPTER V

USE OF DATA

Superintendents' and principals' programs. Tables I and II indicate that practically no superintendent or principal in schools enrolling seventy-five or less is free from teaching duties. This is to be expected as the majority of these schools consist of only three teachers; some have two teachers only. The larger the enrollment of the school the greater is the percentage of non-teaching superintendents or principals.

Table I indicates that but few superintendents teach three subjects and these superintendents are all in the smallest class of schools. Principals, on the other hand, even in schools with enrollments up to 150, quite frequently teach in three distinct subject fields. However, less than one-seventh of the principals in the schools of Class II carry four subjects as a teaching load and of these principals none are found in the larger high schools of the state.

With the exception of a small percentage in the high schools with the smallest enrollment, no superintendent or principal carries the unreasonable five or six subject-field load. It should be noted here that supervision is included as a subject field in eleven of the programs and in these cases the principal's actual teaching preparation would be less. These percentages, therefore, are maximums.

TABLE I

DISTRIBUTION OF THE 69 REPORTING SUPERINTENDENTS IN RELATION
TO SCHOOL SIZE AND NUMBER OF SUBJECT FIELDS TAUGHT

Number of subjects	Class I		Class II		Class III		Class IV		All schools	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	1	5	5	29	9	42	9	90	23	33
1	3	13	7	42	7	37	1	10	18	26
2	9	39	5	29	4	21			18	26
3	4	16							4	6
4	5	22							5	7
5 or 6	1	5							1	2
Totals	23	100	17	100	19	100	10	100	69	100

TABLE II

DISTRIBUTION OF THE 78 REPORTING PRINCIPALS IN RELATION
TO SCHOOL SIZE AND NUMBER OF SUBJECT FIELDS

Number of subjects	Class I		Class II		Class III		Class IV		All schools	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	0		1	6	2	12	1	9	4	5
1	1	3	1	6	6	35	7	64	15	19
2	5	15	3	19	6	35	3	27	17	22
3	13	38	9	56	3	18			25	32
4	9	26	2	13					11	14
5 or 6	6	18							6	8
Totals	34	100	16	100	17	100	11	100	78	100

TABLE II
DISTRIBUTION OF THE VETERINARY MEDICAL STUDENTS
BY SCHOOL YEAR AND NUMBER OF YEARS STUDYING

Number of Subjects	Class I		Class II		Class III		Class IV		Class V		Class VI	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0	0	0	1	3	1	3	1	1	3	1	4	4
1	1	3	1	3	1	3	1	1	3	1	1	1
2	2	6	1	3	1	3	1	1	3	1	1	1
3	3	9	1	3	1	3	1	1	3	1	1	1
4	4	12	1	3	1	3	1	1	3	1	1	1
5 or 6	5	15	1	3	1	3	1	1	3	1	1	1
Totals	64	100	32	100	16	100	8	100	4	100	2	100

The information contained in Table III is indicative not only of the two subject combinations which principals and superintendents carry, but no doubt, also of their own choice of subject teaching. Of course, necessity often rules, but in most cases these school heads have their choice.

Social science seems to be the leading choice of the administrators. Mathematics and English are apparently their next choices. In the field of science, general science is named about fifty per cent of the time. It is noteworthy that supervision is named only four times here, and four times also in combination with two other subjects as Table IV indicates. This is a total of eight appearances, or two-thirds of all the appearances of supervision as a school administrator's activity. If these programs really indicate the importance that school administrators give to supervision, it seems rather surprising in view of the present philosophy stressing the need for administrators who supervise.

Table IV is similar and indicates mathematics and social science as predominant in the administrators' load. Physical education is listed about one-half as many times as either mathematics or social science. However, in combinations of four or more, physical education is most frequently taught. Every subject field but art is found in this list. Such subjects as "guidance" and "physiology" seem conspicuous by the rareness of their occurrence, in view of modern educational philosophy stressing their value.

The information obtained in this study is not only of the two subjects but also of the superintendents' views on the importance of subject teaching. It is necessary to point out that in most cases there are no direct comparisons. Social science is the first choice of the administrators. The second choice is the field of science. The third choice is named about fifty per cent of the time. It is interesting that supervision is named only once. This is in combination with two other subjects. This is a point to which attention should be given. of all the appearances of supervision as a subject in the teacher's activity. It is also interesting to note the importance that school administrators place on the subject of supervision. This is a point to which attention should be given. Table IV is a list of the subjects and their relative importance. Physical education is listed as the most important. Social science is listed as the second most important. Other mathematics or model science is listed as the third most important. It is interesting to note that of the four subjects, physical education is the only one taught. Every subject listed in the list is taught. Such subjects as "Guidance" and "Psychology" are not taught by the teachers of the high school. This is a point to which attention should be given. Educational philosophy is listed as the most important.

TABLE III

SUBJECTS APPEARING IN TWO-SUBJECT COMBINATIONS:
35 PRINCIPALS AND SUPERINTENDENTS

Subject	Number of times subject appears in combination
Social Science	16
Mathematics	14
English	9
Spanish	6
Commerce	6
Supervision	4
Biology	3
Library	3
Manual Arts	3
Physics	2
Music	1
Latin	1
General Science	1
Psychology	1

SUBJECTS APPROPRIATE TO THE
SS MINISTRY AND THE SS

Subject	Number of copies in collection
Social Science	20
Mathematics	11
English	9
Spanish	5
German	1
Supervision	1
Biology	1
History	1
Manual Arts	1
Physics	1
Music	1
Latin	1
General Science	1
Psychology	1

TABLE IV

SUBJECTS APPEARING IN THREE-SUBJECT COMBINATIONS:
29 PRINCIPALS AND SUPERINTENDENTS

Subject	Number of times subject appears in combination
Mathematics	16
Social Science	15
General Science	9
Physical Education	8
Physics	6
Commerce	6
Supervision	4
English	4
Chemistry	4
Biology	2
Manual Arts	2
Spanish	2
Home Economics	2
Library	2
Music	1
Latin	1
Guidance	1
Physiology	1
Psychology	1

SUBJECTS AVAILABLE IN THIS DEPARTMENT IN MICROFILM AND MICROFILMED

Subject	Number of Volumes
Mathematics	10
Social Sciences	1
General Science	1
Physical Sciences	1
History	1
Geography	1
Anthropology	1
Psychology	1
Medicine	1
Law	1
Engineering	1
Chemistry	1
Biology	1
Agriculture	1
Business	1
Education	1
Art	1
Music	1
Language	1
Religion	1
Philosophy	1
Political Science	1
Psychology	1

COLORADO STATE

UNIVERSITY CONTENT

Table V gives a panorama of the relative frequency of subject fields in the programs of the school heads. Three subjects predominate, namely: mathematics, social science, and science. Physical education, commerce, and Spanish occur less than one-half the time of the first three. Supervision, it will be seen, occurs but twelve times.

This table contains information relating to the particular subject fields combined in administrators' programs. Mathematics, social science and science lead. These could hardly be called related fields, but would seem explainable as being generally acceptable subjects to men teachers. Science and mathematics are related, however, and this combination ranks third in the most-frequent-combination list. Other leading combinations, as physical education with social science, commerce with mathematics, Spanish with social science, show a somewhat reasonable combination of subject fields. Agriculture with English seems a rather unrelated combination. Noteworthy, is the dominance of Spanish in the foreign language group. Latin appears but two times which is no doubt indicative of the influence of the Spanish-Anglo characteristics of the state. Spanish, it will be noted also, appears over half as many times as English does.

That there is an almost endless variety of combinations both of related and unrelated subject fields in administrators' programs may be inferred from Table V. The total is eighty-seven different combinations.

TABLE V

COMBINATIONS OF SUBJECTS: 120 PRINCIPALS AND SUPERINTENDENTS

Subject field	Frequency of occurrence			Most frequent combination	Second most frequent	Third most frequent
	In different programs	As a single subject	In combination			
1	2	3	4	5	6	7
Mathematics	55	10	45	Soc.Sc. 14	Science 8	English 5
Social Science	54	11	43	Math. 14	Eng. 5	Commer. 2
Science	47	4	43	Math. 8	Eng. 5	
English	30	2	28	Soc.Sc. 5	Math. 5	Commer. 4
Commerce	21	2	19	Math. 5	Eng. 4	Spanish 3
Physical Educa.	19	1	18	Soc.Sc. 5	Math. 2	
Spanish	17	0	17	Soc.Sc. 5	Commer. 3	
Supervision	12	1	11	Math. 3	Soc.Sc. 2	
Agriculture	6	1	5	Eng. 4	Math. 3	Soc.Sc. 2
Manual Arts	6	0	6	Soc.Sc. 2	Span. 2	Eng.1, Math.1
Music	5	0	5	Math. 2	Soc.Sc. 2	Eng. 2
Library	5	0	5	Soc.Sc. 3	Eng. 1	
Physiology	4	1	3	Science 2	Math. 2	Phy. Ed.2
Psychology	3	0	3	Eng. 2	Span. 1	Math 1
Latin	2	0	2	Soc.Sc. 1	Span. 1	Eng. 1
Guidance	2	0	2	Soc.Sc. 1	Home E. 1	Phy.Ed. 1
Home Economics	2	0	2	Soc.Sc. 2	Guid. 1	
Arts and Crafts	1	0	1	Span. 1	Eng. 1	Super. 1

*The sum of the combinations listed in Columns 5, 6, and 7 does not equal the number in Column 4. If a principal or superintendent teaches English, social science and Spanish, English is listed in Column 4 as appearing in one combination, while the combination of English and social science is recorded in Column 5, and the combination of English and Spanish in Column 6.

If the combinations were on the basis of individual subjects, it is doubtful whether there would be any two alike. This table indicates also, that with the exception of mathematics and social science, the subject fields are taught but very rarely as single fields. Even in these two fields they appear only one-fifth of the total occurrence of the particular subject fields.

Teachers' Programs. It is apparent from Table VI that about three-fifths of the teachers in the smallest class of New Mexico high schools carry subjects in three or more subject fields. Most of these fall in the three and four subject-field load. In the next larger class of schools a great improvement is seen, as more than three-fourths of these teachers carry only one or two subject fields. It is possible, of course, for a teacher to be prepared in two subject fields under our "Major" and "Minor" system. The two upper classes show a greater percentage of teachers in one field, which is to be expected. It is rather surprising, however, to find 29 per cent of the teachers in the schools of Class IV teaching in two fields. This class consists of the larger city high schools of the state and one would expect to find teachers handling subjects in their major field, only.

If the conditions were of the kind which would make it impossible to distinguish between the two fields, it is doubtful whether the results would be significant. Table indicates that, with the exception of the results in the social sciences, the results in the physical sciences are generally as single fields. Even in the social sciences only one-third of the total number of fields is a joint field.

Teachers' Reports. It is an interesting fact that about three-fifths of the teachers in the schools of New Mexico report that they are in the physical sciences subject field. One of these fields is the joint field of subject-field. It is the most common of all fields. Great improvement is seen, as seen from the results of these teachers' reports, only one or two subject fields. It is possible, of course, that the results in the social sciences subject field are due to the fact that the teachers in the upper classes are more likely to report that they are in the social field, which is to be expected. It is, however, however, to find 85 per cent of the teachers in the social of Class IV teaching in two fields. The data indicate that the larger city high schools of the state are more likely to report to find teachers teaching in their subject field, only.

TABLE VI

DISTRIBUTION OF THE 586 REPORTING TEACHERS IN RELATION TO
SCHOOL ENROLLMENT AND NUMBER OF SUBJECT FIELDS

Number of subjects	Class I		Class II		Class III		Class IV		All schools	
	No.	%	No.	%	No.	%	No.	%	No.	%
1	18	15	31	28	83	47	120	66	252	43
2	29	24	46	41	74	42	53	29	207	34
3	35	30	27	24	17	10	7	4	86	15
4	29	25	6	5			1	*1	36	6
5	6	5	2	2					8	1
5										
6	1	*1			1	*1			2	*1
Totals	118	100	112	100	115	100	181	100	586	100

*Per cent is rounded to make not less than 1%.

The percentage of teachers carrying subjects in only one or two subject fields, it will be noticed, increases as the enrollment becomes larger. It is gratifying to see that only a small percentage of teachers in the two largest groups of schools are teaching in more than two subject fields. Even the larger schools in Class II have considerably less than one-half of their teaching personnel teaching in three or more fields, and these are practically all in the three subject field. One would not be surprised to find almost one-third of the teachers handling four or more subject fields in small schools having only two to four teachers. In general, it will be noted that only two-fifths of the administrators of these small high schools have kept their teachers' assignments within two subject fields, and that over half the teachers are required to teach in three and four subject fields. Small high schools, it should be observed, are the ones to which beginning secondary teachers are most likely to go. It appears that in fully half of these positions they will be expected to handle three or more subject fields.

Tables VII and VIII indicate to teachers of any particular field how frequently they will be expected to teach in other subject fields than their major interest. Neither of these tables, of course, indicates just what the other subject fields would be by name. These two tables, however, show the proportionate need for one or two minors in the preparation of a teacher and should serve as a guide in the selection of their subjects.

The percentage of teachers having a master's degree is only one or two subject fields. It will be noticed, however, that the enrollment becomes larger in the subject fields where only a small percentage of teachers have a master's degree. Even the larger schools in which the enrollment is larger than one-half of total enrollment are subject fields in which or more fields, and these are proportionally larger in the subject field. One would not be surprised to find at least one-third of the teachers in the subject fields in which the enrollment is small schools having only two to four teachers. In general, it will be noted that only two-thirds of the teachers of these small high schools have a master's degree. It is noted that within two subject fields, the enrollment is larger than teachers are required to teach in the subject fields. Small high schools, it is noted, are subject fields in which beginning secondary teachers are found. It appears that in the subject fields in which the enrollment will be expected to be larger than one-half of total enrollment. Tables VII and VIII are presented to teachers in the subject field for the purpose of showing the enrollment in other subject fields. The enrollment in other subject fields, of course, is larger than the enrollment in subject fields which are subject fields. These two tables, however, show the proportionate enrollment in the subject fields. The preparation of a teacher and subject field is a subject of selection of their subjects.

TABLE VII
SUBJECTS APPEARING IN TWO-SUBJECT COMBINATIONS:
202 TEACHERS

Subject	Number of times subject appears in combination
English	79
Science	50
Social Science	47
Mathematics	45
Spanish	36
Commerce	34
Physical Education	22
Music	19
Home Economics	17
Agriculture	15
Latin	11
Manual Arts	11
Physiology	6
Library	5
Art	2
Guidance	2
French	1
Arts and Crafts	1
Printing	1

SUBJECTS TO WHICH THE FOLLOWING ARE APPLIED

Subject	Number of Credits
---------	-------------------

English	1
Science	2
Social Science	2
Mathematics	2
Spanish	2
Commerce	2
Physical Education	2
Music	2
Home Economics	2
Art	2
Latin	2
Manual Arts	2
Physiology	2
History	2
Art	2
Education	2
Government	2
Literature	2

TABLE VIII
SUBJECTS APPEARING IN THREE-SUBJECT COMBINATIONS:
86 TEACHERS

Subject	Number of times subject appears in combination
Social Science	41
Science	37
English	31
Physical Education	29
Mathematics	25
Spanish	17
Commerce	15
Home Economics	14
Music	12
Physiology	7
Manual Arts	6
Latin	5
Agriculture	5
Library	5
Printing	4
Guidance	3
French	1
Art	1

SUBJECTS AND COURSES OF STUDY

Department	Subject
1	Art
2	French
3	Guidance
4	Printing
5	Library
6	Agriculture
7	Latin
8	Manual Arts
9	Physiology
10	Music
11	Home Economics
12	Commerce
13	Spanish
14	Mathematics
15	Physical Education
16	English
17	Science
18	Social Science

These two tables, also, show the relative prevalence of the various subject fields in the programs of New Mexico high schools. This is also shown in Table IX and more completely so there. Table VII indicates that over 200 teachers carry courses in another subject field in addition to their major field. This is about one-third of the teaching positions covered in this study. Table VIII shows that eighty-six, or less than one-eighth, carry two or more subject fields in addition to their major interest.

Table IX, while not showing the two and three combinations of subject fields separately, does include them under columns 2, 4, 5, 6, and 7. This table is a panoramic view of the whole field of subjects in combination and as single subject fields. It shows in true relative position, the prevalence of the various subject fields in the programs of New Mexico teachers. It is well to remark here that these tables show what is in practice throughout the state--not what ideally should be.

Some incongruous combinations are not shown here, as their occurrence was less frequent than the more prevalent ones shown. However, there are several indications of rather unrelated subject fields. English and physical education as a major-minor combination in college are quite rare. The table for the 1937 graduates, in fact, indicates no such combination. Home economics and social science might be improved on as a combination, it seems.

TABLE IX

COMBINATIONS OF SUBJECTS: 586 HIGH SCHOOL TEACHERS*

Subject field	Frequency of occurrence			Most frequent combination	Second most frequent	Third most frequent
	In different programs	As a single subject	In combination			
1	2	3	4	5	6	7
English	195	52	143	Soc.Sc.31	Span. 20	P.E.15, Com.15
Social Science	150	28	122	Eng. 31	P. E. 19	Span. 16
Science	126	20	106	Math. 32	Agri. 15	P. E. 15
Commerce	111	42	69	Eng. 15	Soc.Sc.12	P.E.7, Math. 9
Mathematics	103	19	84	Sc. 32	Eng. 15	P.E.11, Com. 9
Physical Educa.	76	6	70	Soc.Sc.19	Sc. 15	Eng.15, Math.11
Spanish	73	11	62	Eng. 20	Soc.Sc.16	P. E. 7
Music	61	19	42	Eng. 13	Soc.Sc.8	Science 6
Home Economics	57	22	35	Eng. 13	Sc. 9	Soc. Sc. 6
Manual Arts	39	18	21	Sc. 6	Math. 6	Agri. 5
Agriculture	29	5	24	Sc. 15	Man.Art5	P. E. 4
Physiology	27	2	25	Sc. 5	Soc.Sc.4	Eng. 3
Library	21	4	17	Eng. 9	H. E. 1	Span. 1
Latin	20	1	19	Eng. 8	Soc.Sc.5	Span. 3
Art	7	1	6	P. E. 2	H. E. 2	
Guidance	5	0	5	Com. 2	Soc.Sc.2	
Printing	5	0	5	Math. 2	Sc. 2	
Arts and Crafts	3	2	1	Man.Art 1		
French	2	0	2	Eng. 1	Span. 1	Science 1

*The sum of the combination listed in Columns 5, 6, and 7 does not equal the number in Column 4. If a teacher teaches English, social science and Spanish, English is listed in Column 4 as appearing in one combination, while the combination of English and social science is recorded in Column 5, and the combination of English and Spanish in Column 6.

TABLE IX

COMBINATIONS OF SUBJECTS: SEE HIGH SCHOOL TEACHERS*

Subject field	Frequency of occurrence				Second most frequent	Third most frequent
	In two-grams	In three-grams	In four-grams	In five-grams		
1	2	3	4	5	6	7
English	185	52	145	200	20	P. E. 15, Com. 15
Social Science	180	38	122	180	21	P. E. 15, Span. 15
Science	175	30	108	160	22	Agri. 15, P. E. 15
Commerce	171	42	69	115	16	P. E. 15, Math. 9
Mathematics	163	19	64	105	22	P. E. 15, Com. 9
Physical Science	75	8	70	100	15	Eng. 15, Math. 11
Spanish	73	21	62	100	20	P. E. 15, P. E. 15
Music	61	19	48	100	13	Soc. 15, Science 8
Home Economics	57	22	35	100	13	Soc. 15, Soc. 15
Manual Arts	39	18	21	80	6	Math. 8, Agri. 8
Agriculture	39	8	24	80	15	Man. Arts 15, P. E. 15
Physiology	27	2	25	80	5	Soc. 15, 4 Eng. 15
Library	21	4	17	80	9	P. E. 15, Span. 15
Latin	20	1	19	80	8	Soc. 15, 5 Span. 15
Art	7	1	6	80	2	P. E. 15, 2
Guidance	8	0	8	80	2	Soc. 15, 2
Printing	8	0	8	80	2	Math. 2, 2
Arts and Crafts	8	0	1	Man. Arts 1	1	Man. Arts 1
French	8	0	2	Eng. 2	1	Span. 1, Science 1

*The sum of the combination listed in Columns 2, 3, and 7 does not equal the number in Column 1. If a teacher teaches English, social science and Spanish, English is listed in Column 2 as appearing in one combination, while the combination of English and social science is recorded in Column 3, and the combination of English and Spanish in Column 7.

Physiology and social science or English appear quite distantly related. A survey of this whole table indicates, however, a general adherence to reasonable subject field combinations. English and social science seem to lead and the tables also show these two fields as offering the greatest number of positions. Science, commerce, and mathematics represent a great portion of the teaching positions of the state also. Physical education, Spanish, music and home economics occur less frequently, but are fairly numerous.

A caution might well be given here. The fact that two or more subjects are found most frequently in combination does not necessarily mean that the greatest demand is for these combinations, because the table here, does not indicate the supply of teachers. However, the combinations which appear most frequently do show what would generally be best to choose for majors and minors, as far as present state practice is concerned.

Latin and French are conspicuous by the rarity of their occurrence and Spanish for its frequency in the programs of study of the New Mexico high schools. Other state studies generally show Latin and French leading the language fields. It appears to the writer that in the field of languages New Mexico high schools are carrying out the dictum of modern educational philosophy in giving instruction in the needs of the localities rather than formal studies. New Mexico,

physiology and mental science in general. The
tendency of this study is to
however, a general reference to the various
functions. The study of the human mind and
tables also show the various functions of the
number of positions. The study of the human
present a great portion of the human mind
state also. The study of the human mind
economics occur in the study of the human
A chapter on the study of the human mind
or more subjects and the study of the human
does not necessarily mean that the study of the
these combinations. The study of the human
the study of the human mind. The study of the
appear most frequently to show what would be the
to choose for the study of the human mind
practice is concerned.

Latin and Greek are the languages of the
their occurrence and English for the study of the
terms of study of the human mind. The study of the
studies generally show Latin and Greek in the study of the
fields. It appears to be the study of the human
gives New Mexico and the study of the human
of modern educational psychology is the study of the
needs of the localities where the study of the human mind

as is quite well known, has a bilingual population of Spanish and Anglos.

A final observation should be made regarding the combinations as shown in Table IX. While this table does show a general adherence to reasonable subject field combinations, this cannot be taken as conclusive, inasmuch as the total number of cases of the three most frequent combinations shown is, on the average, only one half of the total number of combinations of column 4. In other words the other fifty percent of subject combinations not shown by name in this table would show several other varieties of combinations. These would be unrelated, no doubt, as those shown are, for the most part, the only ones that could be related. The table, in other words, reveals that approximately half of the combinations are, in a general way, within related fields. This condition of subject combinations should, of course, be improved. Suggestions as to what are the best combinations might be taken from the related subject combinations now in practice as revealed by this thesis. In some cases, of course, the subjects taught together, as the tables show, are not related and should be avoided. The arrangement of the various subjects under subject fields as given on pages 15 and 16 is the first step in arranging a teacher's program. Of course, printing would be listed under manual arts, physiology under science, and arts and crafts under art or manual arts. When

as in quite well known, and the following conditions
applied and applied.

A first consideration should be made in regard to the

direction of the flow of the material, and the

a general statement of the conditions of the

this cannot be made in general, but it is

number of cases of the flow of the material

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of combinations of the material, and the

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This condition of the material, and the

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might be taken from the table, and the

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the subjects might be taken, and the

related and should be included, and the

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the first step in the table, and the

writing would be listed in the table, and the

science, and the table would be

the courses to be taught are thus logically arranged it should not be difficult to keep a teacher's program in the two or three subject field limit.

Of course the writer is aware that teachers are sometimes qualified to teach only in particular subjects which, by no arrangement on the administrator's part, can be kept within related fields. This is unquestionably a direct reflection on the teacher-training institution. A verbatim statement by Kirby of Iowa well bears this out.¹

True enough many teacher-training institutions do not directly control the training in content subjects given to prospective teachers, but this administrative accident does not remove their responsibility for those who are receiving training for positions in high school. If the content subjects are taught by the faculty of the liberal-arts college and the professional subjects are taught by the faculty of the college of education, the difficulty of obtaining a ready adjustment to the needs of teaching positions in the high school may be increased, but the responsibility is not removed. Those in charge of training high school teachers--and here the writer would include those in charge of teaching the professional subjects--must employ the same means for determining the training to be given these teachers in the content of subjects that has been advocated and practiced in the determination of training for positions in other vocational fields; that is, a critical analysis must be made of the jobs to which prospective teachers aspire in order to find out first what combinations of content subjects will most frequently confront them. . . . In many instances the student had chosen as his major subject in college some study that found no place in the high school program of studies, . . . In most instances no attention had been given to a minor subject.

¹ T. J. Kirby, "Subject Combinations in High School Teacher's Programs," School Review, 1926 (Chicago: University of Chicago), p. 494.

the course to be taught are thus logically arranged it should not be difficult to keep a teacher's program in the two or three subject field limit.

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1. J. L. Kirby, "Subject Combinations in High School Teacher's Programs," School Review, 1928 (Chicago: University of Chicago), p. 424.

Quoting from Koos and Woody² we have this more detailed recommendation:

The committee of Seventeen recommended not only a detailed and specialized study of the subjects to be taught as a component of the training of teachers for work in secondary schools, but they recommended also (a) that the program of studies selected by each student should include work in subjects outside of those in which he is making special preparation, sufficient to give some insight into the different fields of knowledge and to avoid the dangers of over-specialization, and (b) that it should contain also one or more subjects from a group, including history, economics, and sociology, and in addition, a course in general psychology and at least on one from a group of subjects including the history of philosophy, ethics and logic. The committee recommended the work in the social studies in order that the student might be given the 'social outlook' while the work in the group last named should be required to give an outlook upon education as the development of the individual.

A few observations concerning the curricula of New Mexico high schools, as indicated by this table, reveals some commonly overlooked conditions. If the frequency of physiology is an indication of the prevalence of such teaching we conclude that less than one third of the high schools are teaching that subject even though the state law implies that such instruction is basic. Thus only twenty-seven out of 102 schools are listed as having physiology in their programs. The occurrence of agriculture seems rather small in view of the general state needs. Printing, of course, would

² L. V. Koos, and C. Woody, "The Training of Teachers in the Accredited High Schools of the State of Washington," National Society for Study of Education, Eighteenth Yearbook, Part I (1919), 213-257.

Quoting from "The New Psychology" by S. S. Stevens

Detailed description of the experimental method

The committee of the American Psychological Association
detailed and described the experimental method in the following
teaching as a component of the psychology curriculum
for four years in the high school and college
also (a) that the program of study should be such
that it should include a course in psychology
those in which the student should be able to
fluent to give some idea of the different
of knowledge and to avoid the danger of over-
specialization, and (b) that it should include
one or more subjects from the group of natural
sciences, and psychology, and the addition of some
in general, psychology and its history and its
group of subjects including the history of psychology
ethics and logic. The committee recommended the study
in the social studies in order that the student
be given the "social" aspect of psychology.
group last named should be required to give an account
upon a selected in the development of the individual.

A few experiments concerning the development of
Mexico high schools, as indicated by the results, were a
some commonly overdone experiments. It is found that
physiology is an excellent subject for the study of
the two committees that have been set up to study
are teaching that subject in the high schools
that such instruction is better. This and other
of 100 schools are listed as having psychology in their
curriculum. The committee of the American Psychological
view of the general study of psychology, of the
view of the general study of psychology, of the

S. S. Stevens, and L. B. Loomis, The Psychology of the
in the Association of Psychology in the United States
National Society for the Study of Experimental Psychology
Sept 1 (1919), 112-113.

be expected to occur but infrequently in a non-commercial state as New Mexico. The few times "guidance" appears indicates a small beginning in this modern school effort to assist pupils in their choice of training. The occurrence of arts and crafts, which has reference to weaving and other native handicraft, is rather interesting if not indicative of the school efforts to meet local demands.

Comparison of combinations through three years. Table X presents an interesting comparison with limited data of the prevalence of certain dominant subject field combinations. If the forty-one school programs are considered a fair sampling for the school year of 1935-36, we find a remarkable persistence. There is to be expected, of course, a change in frequencies from first to second or to third position of combined subjects, because of the limited data available and the qualifications of different teachers employed from year to year.

English, it will be observed, is in the same order, although physical education displaced library in 1936-37. The social science combinations present the greatest change in the major subject fields. Physical education and Spanish here have displaced commerce and science as second and third frequencies. Science is combined with the same subjects, except for the fact that social science is not combined with it in 1936-37. Commerce is combined with the same subjects

except that physical education also appears in combination with it. Mathematics is in combination with English instead of social science in 1936-37. Physical education and Spanish show no change. Music shows but little change--social science displacing mathematics and commerce. Home economics is practically the same with only commerce shown additionally. The remaining subjects show proportionally the same amount of persistence in combinations.

If the thirty-one programs for the school year of 1934-35 are considered as at all indicative of that year's combinations a definite general persistence of combinations of all three years is seen. Some difference, of course, would be expected on such limited data. English for instance in two years of the three years is combined with library but is otherwise quite similarly combined. Social science each year is most often combined with English. Spanish, science and physical education are combined with it in two of the three years. Science, likewise, consistently is most frequently combined with mathematics. Agriculture also appears in the science combination each of the three years. Social science and physical education appears with it in two of the years. Commerce each year has a high frequency of combination with English. Social science and mathematics appear in combination with commerce two of the three years. Mathematics every year is most frequently combined with science. Physical education likewise appears each year in its combination.

Commerce, with further data, would probably be frequent enough to appear in the table each year.

A check of the minor curricula subjects is next in order. Physical education combines consistently each year with social science, science, mathematics and English. Of the four, social science appears most frequently with it. Spanish, it will be noted, has English and social science in its combination each year. Physical education appears with it two years. Music combines most frequently with English all three years. Science also combines with it, but not so frequently each year. Home economics seems to have a consistent English, science, and social science combination complex each year. Manual arts every year is combined with science and mathematics.

From this limited data it may be roughly inferred that certain combinations do persist. For teachers a perusal of this table should be at least a hint of what are considered standard combinations by the practice of the state schools. Of course, there are other variations than those shown here, but their frequency is less than the three shown for each subject field.

Desirable combinations. It appears from Table XI that New Mexico superintendents are mostly in need of teachers with preparation in Spanish, combined with either science, commerce, coaching, or manual arts. These combinations are mentioned

Commerce, with a view of this, we have decided to have
enough to appear in the table and year.
A study of the subject indicates that it is
order. Physical education courses are usually arranged
with social science, science, and mathematics in the
four, social science, science, and mathematics in the
Spanish, it will be noted, as a subject and social science in
its combination with Spanish. It is also noted that
it two years. It is also noted that it is
all three years. Science also combined with it, but not so
frequently each year. Some schools seem to have a science
test English, science, and social science combination course
each year. Annual tests every year is common in the schools
and mentioned.
From this table, it can be seen that the subject of
certain combinations of subjects. For instance, a subject of
this table would be to have a list of what the subjects
standard combinations in the schools of the state school.
Of course, there are other variations with these subjects,
but their frequency is less than the ones shown for each
subject field.

Physical education. It appears that in the
New Mexico superintendents and schools. A study of the subject
preparation in Spanish, combined with other social sciences,
coaching, or manual arts. These combinations are mentioned

two or three times, but Spanish with home economics, physical education, or social science are listed also. In all, Spanish is called for some fourteen times, or in one-third of the combinations cited.

Music and English are mentioned eight times each. The usual recommendation was that music was desired in combination with any other subject. English is combined with six other subject fields in this listing and history four. The social science field, including history, is mentioned seven times in all and science six times. Science, it will be seen, is recommended four of these times in combination with manual arts and twice with mathematics.

A perusal of the 1937 graduate column indicates that nine, or about one-fifth of these combinations, will find qualified graduates in this year's class. The greater part of these graduates will be qualified to teach in only four of these recommended combinations, namely: English and social science, music, home economics and art. With the exception of music, this year's graduate supply in these fields seems out of proportion to the shortage as expressed in this list of recommendations. Only in Spanish combined with physical education or history--and possibly science and Spanish does it appear graduates will be available to supply these combination shortages.

two or three times, but Spanish will have combinations, a third education, or social science and listed also. It will be called for some fourteen times, and in combination with combinations listed.

Music and English are mentioned eight times and a usual recommendation was that music and English be combined with any other subject. English is combined with all other subject fields in this listing and history, English, science field, including history, is mentioned seven times in all and science six times. Science, it will be noted, is recommended four of these times in combination with natural arts and twice with mathematics.

A perusal of the 1937 Graduate Catalog indicates that nine, or about one-fifth of these combinations, will include qualified graduates in this year's class. The remaining part of these graduates will be available to teach in any one of these recommended combinations, music, English and social science, music, home economics, and physical education of music, this year's graduates and in these fields seems out of proportion to the number of graduates in this list of recommendations. Only in natural sciences with physical education or history and possibly science and Spanish does it appear graduates will be available to teach these combination subjects.

TABLE XI

SUMMARY OF TEACHING COMBINATIONS DESIRABLE
BUT HARD TO FILL AS REPORTED BY
NEW MEXICO SUPERINTENDENTS

Teaching combinations needed	Number of times men- tioned by employers	Number of '37 graduates having quali- fications*
English and Latin	1	0
English and Mathematics	1	0
English and Home Economics	1	0
English and Commercial	1	0
English and Social Science	2	8
Spanish and Commercial	3	0
Spanish and Coach	3	0
Spanish and Manual Arts	2	0
Spanish and Home Economics	1	0
Spanish and Physical Education	1	2
History and Spanish	1	1
History and English	1	2
History and Commercial	1	2
Science and Spanish	3	1
Science and Manual Arts	2	0
Science and Mathematics	1	0
Science and Library	1	0
Mathematics and Manual Arts	2	0
Music, English, and Social Science	1	0
Music, English, and Commercial	1	0
Music, Physics and Social Science	1	0
Manual Arts, Mathematics and Science	1	0
Typing, Bookkeeping and Com. English (Mentioned but not Combined)	1	0
Music	5	5
Extra-Curricular	1	0
Mechanical Drawing	1	0
Home Economics	1	6
Art	1	6
Every-day Mathematics	1	0
Manual Arts	1	0
Electrical Training	1	0
Agriculture	1	0

*Taken from College of Education only

SUMMARY OF RESULTS OF THE
 BUT TALLER IN THE
 THE RESULTS OF THE

Teaching curriculum
 The results of the

English and Latin	1
English and Mathematics	1
English and Home Economics	1
English and Commercial	1
English and Social Science	1
Spanish and Commercial	1
Spanish and Social	1
Spanish and Natural Science	1
Spanish and Home Economics	1
Spanish and Physical Education	1
History and Spanish	1
History and English	1
History and Commercial	1
Science and Spanish	1
Science and Natural Science	1
Science and Mathematics	1
Science and Physical Education	1
Science and Home Economics	1
Mathematics and Spanish	1
Mathematics and English	1
Mathematics and Commercial	1
Mathematics and Social Science	1
Mathematics and Physical Education	1
Mathematics and Home Economics	1
Typing, Bookkeeping and English	1
(Optional for not required)	1
Music	1
Extra-Curricular	1
Mechanical Drawing	1
Home Economics	1
Art	1
Every-day English	1
Natural Science	1
Electrical Training	1
Agriculture	1

When you receive all the results

This table represents the recommendations of thirty-three superintendents or principals, which is about one-fourth of the reporting schools. If this is regarded as a fair sampling, the table should be a fair guide of some of the possible combinations which are in more than ordinary demand. It should be noted also that almost two-thirds of these combination suggestions came from the high schools enrolling 150 pupils or less. These are, in all probability, the class of schools to which the graduates will go.

Comparison of the Qualifications of the Graduates of the College of Education (1937) with Positions Available in Their Fields. The "In combination" column of Table XII has reference only to two and three subject combinations which was the rule followed in Tables V and IX on pages 21 and 29 respectively. Combinations of four and more subjects are legion and probably as fluctuating as the magnetic pole. They are, no doubt, merely indicative of the necessities of small high school teaching.

With this in mind, some idea of the number of positions in the school teaching field may be seen from a scanning of the various major and minor combinations. The arrangement is alphabetical, starting with two single majors of home economics and music and then the regular major and minor combinations following. Home economics, as an example, has four graduates, with this alone as a major and no minor. There are

This table represents the results of the

three experiments on the subject of the
fourth of the report, and it is to be
fair sampling, the first result is a fair
the possible combination of the two
demand. It should be noted that the
these combinations are not the same as
enrolling 100 pupils or less. The
the class of schools for which the

Comparison of the results of the
the College of Education (1955) and
Their Field. The "in combination" column of Table 1
reference only to one and have subject to
was the rule followed in Table 1 and in
respectively. Columns of four and five are
legion and number of combinations in the
They are, no doubt, very indicative of the
small high school schools.

With this in mind, some of the results
in the school system. Table 1 shows that
the various major and minor combinations
alphabetical, starting with the letter A
and male and then the letter B and then
followed. Some combinations are not
with this alone as is shown in Table 1.

twenty-two positions of this subject taught alone, as indicated by the data of this study. The number of positions in the various combinations is of course only relative and should not be taken as the highest numbers of single or combination subject positions available in the state. In the case of single subject positions, however, the number is approximately close to the total number as but a small percentage of the large high schools did not report. One field subject teaching positions are practically all in the large high schools, as Table XIII, in the appendix shows.

It is not presumed that the combinations of this year or of any particular year are fixed combinations. It is logical to assume that the combinations are as often made to fit the teacher, as the teacher must qualify to fit the combination. However, it would seem of advantage to a teacher seeking employment to be qualified in subjects usually combined.

Teachers whose preparation includes history, science, and English, according to the table, would find the largest number of potential positions. This, of course, does not tell what the supply is in these combinations. No doubt it is comparatively high. Economics and Spanish are likewise represented in a great number of 1936-1937 teaching positions, in combination and singly. Others likewise are comparatively numerous.

The largest number of candidates is found with English and history as major and minor respectively. This field is high in potential positions also. The next most numerous group of graduates are those in the field of home economics only. The potential positions in this case are comparatively small. Teachers with music qualifications alone have, evidently, but a small field of possible positions. English and Spanish, however, are typical of practically all the other graduate major and minor choices and potential number of positions in New Mexico high schools. The ratio in these cases seems quite reasonable and these candidates with these qualifications should have a good chance of employment.

It is frequently assumed that a science teacher is competent to teach acceptably in any of the high school science fields. This should be true, although it is plain that if the science department of the college where the teacher took his training does not require a diversity of science subjects in his particular major, the teacher would hardly be competent to teach other than his major science. The prospective teacher in his study of this table should bear this in mind and plan to include the several fields of science in his course. This advice would also apply to those majoring in English and history. In actual teaching, for example, an English teacher may be expected to teach public speaking, debate, or dramatics and library. Likewise the

history major may be called upon to teach economics and sociology. Reference to pages 15 and 16 will illustrate in part the variety of courses these majors may be called upon to teach.

History major may be called upon to teach, conduct and
sociology. He should be given the opportunity to
participate in the variety of courses that may be called upon
to teach.

TABLE XII

FREQUENCY OF MAJOR AND MINOR COMBINATIONS CHOSEN BY CANDIDATES
FOR THE BACHELORS DEGREE IN EDUCATION AT THE
UNIVERSITY OF NEW MEXICO DURING 1936-1937

Major subject	Minor subject	Minor subject	Number of candi- dates	Positions of these subjects in 1936-1937*	
				Single or all	In combi- nation
Home Economics			4	22	14
Music			3	19	14
Admin.-Super.	History		1	40	2
Admin.-Super.	Anthropology		1	1	0
Admin.-Super.	English		2	55	2
Art	English		3	55	0
Art	Music		1	20	0
Biology	Chemistry		1	24	24
Biology	English		2	79	6
Biology	Physical Edu.		1	31	17
Biology	Psychology		1	24	0
Biology	History	English	1	117	23
Biology	Spanish	English	1	89	20
Chemistry	Spanish	English	1	89	20
Economics	English		1	78	36
Economics	Physical Edu.	Spanish	1	57	13
Education	Art		1	1	1
Education	History		1	39	0
Education	English	History	1	93	36
English	Government		1	93	36
English	History		8	93	36
English	Spanish		3	65	20
English	Economics	Spanish	1	104	31
History	Anthropology		1	39	0
History	Biology		2	63	33
History	Economics		1	39	3
History	English		2	93	36
History	Government		1	39	39
History	Home Economics		1	61	8
History	Spanish		1	50	21
Home Economics	Biology		1	46	6
Home Economics	Biology		1	46	6
Home Economics	Chemistry		1	46	6
Latin	#English	#History	1	94	#36
Mathematics	Art		1	30	0
Mathematics	Anthropology		1	29	0
Mathematics	Philosophy		1	29	0
Mathematics	Psychology		1	29	1
Music	English		1	73	15
Physical Edu.	Biology		1	31	15
Physical Edu.	Economics		1	51	5
Physical Edu.	Biology	English	1	85	12
Physical Edu.	Biology	Spanish	2	42	7
Psychol.-English	Spanish		1	65	23
Sociology	English		1	93	36
Spanish	French		1	0	1
Spanish	History		1	50	21

*This is a combined table of all teaching personnel.
Single subjects as History, Biology, etc., are indicated as
preparation for subject fields under "Positions of these
subjects."

#Combination of these two subjects.

CHAPTER VI

CONCLUSIONS

1. Many subject fields rarely occur as single fields of teaching. These are, for the most part, the less common branches of learning such as agriculture, library, Spanish, music, physical education, etc. The subjects more commonly taught such as English, social science, commerce, science and mathematics occur as single subjects with greater frequency. However, all subject fields are taught in combination from three to twenty times as often as they are taught singly. The reader needs, perhaps, to be reminded here that the individual subjects within subject fields are in every conceivable variety of combinations--a chaotic condition. Little order is observable even when subjects are studied in their common combinations as has been done here.

2. Certain combinations of subject fields appear to have a high persistence as judged by the comparison of limited data for three years. As a whole about half of these combinations are within related fields. However, a few exceptions to this rule occur as noted on page 40. The foregoing observation has reference only to the two and three subject combinations. In subject combinations involving four or more fields the relationships are necessarily strained and the varieties are endless. This group of four or more

I. Many subjects, when asked to perform
fields of research, find that the most
common branches of learning are in the fields of
Spanish, music, physical education, etc. The subjects are
commonly taught such subjects, and the results are
science and mathematics seem to be subjects with greater
frequency. However, all physical fields are taught in some
action from three to twenty times as often as the other fields.
single. The results are, however, to be regarded as being that
the individual subjects are not equal in every
conceivable field of research--a single condition.
little order is observable even when the subjects are divided in
their own way into groups of equal size.
2. The results of the subjects are not equal in every
have a high percentage of the subjects in
limited data for each group, and the results are not equal
conditions and within each group. However, a few
exceptions to this rule occur as noted on page 100. The
going observation is repeated only in the few and these
subject conditions. In general, the results are not equal in
or two fields the relationship are not necessarily equal and
the variables are equal. This is true of the results

combinations represents approximately one-sixth of the total of two and three combination groups as indicated by Table VI. These four or more subject combinations are principally in the schools with an enrollment of 150 or less, as shown by Tables XIV and XV.

3. It appears, according to the recommendations of the school superintendents, that teachers qualified in Spanish and one or two other subjects are in greatest demand. Music and English in combination with other subjects are in demand, also. Science in combination with manual arts should find a ready opening, it seems.

4. The number of graduates with English and history as their major and minor studies appears proportional to the number of positions in these subject-fields. The English and Spanish majors or minors appear to have a good chance of employment, also. Teachers qualified in some combination of subjects rather than in one field are preferred by school administrators. Spanish or music with some other subject are much in demand.

5. The number of subject combinations seems quite definitely related to the size of the school. Schools with the smallest enrollment have more subject combinations than those with larger enrollments. As the school enrollment increases, the number of subject combinations grows smaller, while inversely the single subject teaching increases.

RECOMMENDATIONS

The following recommendations are based upon the information contained in this study.

1. Principals would do well to finish their Bachelor of Arts work with two minors in addition to their major, which, presumably, would need be administration. These minors might well be selected from the following group: mathematics, science, social science or English. If physical education is taken as a minor, then social science or Spanish would be acceptable second minors. Commerce seems prevalent enough to be placed as a minor in the graduate course for principals.

2. New Mexico school administrators should organize their teachers' programs so that no teacher would be teaching in more than two subject fields and these as far as possible should be related.

3. In view of the fact that New Mexico teaching positions in science almost invariably means teaching in several fields of science, the prospective science teacher should make sure that his major course in science includes as many of the other fields of science as possible. No doubt the college itself will eventually insist on this diversification of science courses. This advice would also seem applicable to majors in the field of English and history.

4. Inasmuch as teaching assignments are practically always a combination of subject fields, it is advisable that prospective high school teachers be prepared in one or two minors in addition to their major. Spanish, music, library, physical education, home economics and commerce would be good minors. English, social science, science and possibly mathematics constitute good majors, as these are the most frequently mentioned subject fields.

5. The teacher-training institutions of New Mexico should give more study to the guidance of teachers in the selection of their major and minor courses. In helping the teacher to select these major and minors the institution should bear in mind several factors, i.e.: the teacher's own aptitudes and preferences; the combinations of related subjects now in practice throughout the state as this study shows; and finally the provision that subjects in their major and minor fields should be diversified.

In all these recommendations it is well to keep in mind that New Mexico high school teachers are preponderantly teaching in two or three subject fields. Hence the wise student will select majors and minors accordingly.

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APPENDIX

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TABLE XIII

DISTRIBUTION OF THE VARIOUS SUBJECTS TAUGHT IN HIGH SCHOOLS
AS SINGLE SUBJECTS OR IN COMBINATION *

Subject	As a single subject		2 Subject combina- tion		3 Subject combina- tion		4 or more combina- tion	
	No.	%	No.	%	No.	%	No.	%
English	54	24	88	39	35	16	48	21
Commercial	44	33	40	30	21	16	27	21
Social Science	39	19	63	31	56	27	46	23
Mathematics	29	18	59	37	41	26	29	19
Science	24	14	56	32	58	34	35	20
Home Economics	22	37	17	30	16	27	4	6
Music	19	30	20	30	13	20	14	20
Manual Arts	18	40	14	31	8	18	5	11
Spanish	11	12	42	47	19	21	18	20
Physical Educa.	7	1	22	23	37	39	29	37
Agriculture	6	17	15	43	5	14	9	26
Library	4	15	8	31	7	27	7	27
Physiology	3	1	6	19	8	26	14	54
Arts and Crafts	2	50	1	25	0	0	1	25
Art	1	14	2	29	1	14	3	43
Latin	1	5	12	55	6	27	3	12
Supervision	1	8	4	33	4	33	3	26
Printing	0	0	1	20	4	80	0	0
Guidance	0	0	2	28	4	58	1	14
French	0	0	1	50	1	50	0	0
Psychology	0	0	1	33	1	33	1	33

*This is a combined table of all personnel teaching.
Subjects are listed in order of their occurrence as
single subjects.

INSTRUCTIONS TO THE CANDIDATE

Subject	English	Mathematics	Science	Home Economics	Music	Art	Physical Education	Health	Liberal Studies	History	Geography	Religion	Foreign Languages	Other
English	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Mathematics	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Science	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Home Economics	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Music	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Art	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Physical Education	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Health	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Liberal Studies	10	10	10	10	10	10	10	10	10	10	10	10	10	10
History	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Geography	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Religion	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Foreign Languages	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Other	10	10	10	10	10	10	10	10	10	10	10	10	10	10

This is a combined table of all subjects. Subjects are listed in order of their importance.

TABLE XIV

SUBJECT COMBINATIONS IN SCHOOLS OF CLASS I*

Subject	As a single subject		2 subject combi- nation		3 subject combi- nation		4 or more combi- nation	
	No.	%	No.	%	No.	%	No.	%
Commercial	5	10	10	20	13	27	21	43
Manual Arts	4	40	1	10	3	30	2	20
English	2	3	17	21	25	30	38	46
Social Science	2	3	14	17	27	33	38	47
Physical Educa.	2	5	0	0	14	34	25	61
Home Economics	1	5	4	25	7	45	4	25
Mathematics	1	3	12	21	17	30	26	46
Music	1	4	5	20	6	24	13	52
Agriculture	1	9	1	9	2	18	7	64
Arts and Crafts	1	50	0	0	0	0	1	50
Physiology	1	8	0	0	3	23	9	69
Supervision	1	13	1	13	3	37	3	37
Science	0	0	9	15	19	32	31	53
Spanish	0	0	13	34	8	21	17	45
Library	0	0	1	12	4	44	4	44
Art	0	0	0	0	1	33	2	67
Latin	0	0	0	0	2	50	2	50
Printing	0	0	0	0	1	100	0	0
Psychology	0	0	0	0	1	50	1	50

*This is a combined table of all personnel teaching.
Subjects are listed in order of their occurrence as
single subjects.

TABLE IV

SUBJECT COMPARISONS IN NUMBER OF CLASS

Subject	single subject	single subject	2 subject	2 subject	2 or more
Psychology	0	0	0	1	1
Printing	0	0	0	1	0
Latin	0	0	0	0	0
Art	0	0	0	0	0
Library	0	0	1	0	0
Spanish	0	0	0	0	0
Science	0	0	0	0	0
Supervision	1	1	0	0	0
Physiology	1	1	0	0	0
Arts and Crafts	1	0	0	0	0
Agriculture	1	0	0	0	0
Music	1	0	0	0	0
Mathematics	1	0	0	0	0
Home Economics	1	0	0	0	0
Physical Education	2	0	0	0	0
Social Science	2	0	0	0	0
English	2	0	0	0	0
Manual Arts	4	0	0	0	0
Commercial	6	0	0	0	0

This is a combined table of all personal teaching subjects are listed in order of their occurrence as single subjects.

TABLE XV

SUBJECT COMBINATIONS IN SCHOOLS OF CLASS II*

Subject	As a single subject		2 subject combination		3 subject combination		4 or more combination	
	No.	%	No.	%	No.	%	No.	%
Commercial	8	26	16	45	5	16	4	13
Social science	7	16	13	30	17	39	7	15
English	6	16	17	46	5	14	9	24
Home economics	5	29	5	29	7	41	0	0
Manual arts	5	38	6	46	1	8	1	8
Mathematics	3	10	11	35	14	45	3	10
Science	1	2	14	34	23	56	3	8
Music	1	8	6	46	5	38	1	8
Agriculture	1	10	7	70	1	10	1	10
Arts and crafts	1	100	0	0	0	0	0	0
Physiology	1	9	3	25	4	33	4	33
Spanish	0	0	8	53	6	40	1	7
Physical Educa.	0	0	3	14	15	72	3	14
Library	0	0	2	17	1	33	3	50
Art	0	0	1	50	0	0	1	50
Latin	0	0	2	67	0	0	1	33
Guidance	0	0	1	20	3	60	1	20
Supervision	0	0	1	50	1	50	0	0

*This is a combined table of all personnel teaching.
Subjects are listed in order of their occurrence as single subjects.

TABLE XVI

SUBJECT COMBINATIONS IN SCHOOLS OF CLASS III*

Subject	As a single subject		2 subject combina- tion		3 subject combina- tion		4 or more combina- tion	
	No.	%	No.	%	No.	%	No.	%
English	16	29	36	66	3	5	0	0
Social Science	16	34	22	47	9	19	0	0
Commercial	15	60	8	32	1	4	1	4
Mathematics	12	32	18	47	8	21	0	0
Science	9	21	21	49	12	28	1	2
Home Economics	8	47	7	41	2	12	0	0
Music	8	50	8	50	0	0	0	0
Manual Arts	4	33	4	33	3	25	1	9
Spanish	4	20	11	55	5	25	0	0
Physical Educa.	1	7	8	57	4	29	1	7
Agriculture	1	11	5	56	2	22	1	11
Library	1	65	4	24	2	11	0	0
Physiology	1	33	0	0	1	33	1	33
Arts and Crafts	0	0	1	100	0	0	0	0
Art	0	0	1	100	0	0	0	0
Latin	0	0	3	50	3	50	0	0
Printing	0	0	1	3	3	97	0	0
Guidance	0	0	1	50	1	50	0	0
French	0	0	1	50	1	50	0	0
Supervision	0	0	1	100	0	0	0	0
Psychology	0	0	1	100	0	0	0	0

*This is a combined table of all personnel teaching. Subjects are listed in order of their occurrence as single subjects.

TABLE XVI

SUBJECT COMBINATIONS IN WHICH NO CLASS IS

Subject	As a single subject	2 subject combinations	3 subject combinations	4 or more combinations
English	10	30	60	0
Social Science	10	34	47	0
Commercial	10	30	43	1
Mathematics	10	30	47	0
Science	0	31	40	3
Home Economics	0	47	41	0
Music	0	30	30	0
Manual Arts	4	33	33	1
Spanish	4	30	33	0
Physical Education	7	30	30	1
Agriculture	1	31	30	1
Library	1	33	34	0
Physiology	1	33	30	1
Art and Crafts	0	0	100	0
Art	0	0	100	0
Latin	0	0	30	0
Printing	0	0	3	0
Guidance	0	0	30	0
French	0	0	30	0
Supervision	0	0	100	0
Psychology	0	0	100	0

This is a combined table of all personnel teaching. Subjects are listed in order of their occurrence as single subjects.

TABLE XVII
SUBJECT COMBINATIONS IN SCHOOLS OF CLASS IV*

Subject	As a single subject		2 subject combination		3 subject combination		4 or more combination	
	No.	%	No.	%	No.	%	No.	%
English	30	59	18	35	2	4	1	2
Commercial	16	59	8	30	2	7	1	4
Social Science	14	44	14	44	3	9	1	3
Science	14	47	12	40	4	13	0	0
Mathematics	13	40	18	54	2	6	0	0
Music	9	75	1	17	2	8	0	0
Home Economics	8	89	1	11	0	0	0	0
Spanish	7	41	10	59	0	0	0	0
Manual Arts	5	50	3	30	1	10	1	10
Physical Educa.	4	21	11	58	4	21	0	0
Agriculture	3	60	2	40	0	0	0	0
Library	3	75	1	25	0	0	0	0
Art	1	100	0	0	0	0	0	0
Latin	1	11	7	78	1	11	0	0
Physiology	0	0	3	100	0	0	0	0
Supervision	0	0	1	100	0	0	0	0

*This is a combined table of all personnel teaching. Subjects are listed in order of their occurrence as single subjects.

Table 1

Subject and Number of Hours of Instruction

Subject	Hours	Subject	Hours	Subject	Hours	Subject	Hours	Subject	Hours
English	30	Mathematics	15	Science	15	History	15	Physical Education	15
Composition	15	Algebra	15	Chemistry	15	Geography	15	Art	15
Social Science	15	Geometry	15	Biology	15	Health	15	Music	15
Science	15	Trigonometry	15	Botany	15	Physical Education	15	Drama	15
Mathematics	15	Calculus	15	Zoology	15	Physical Education	15	Physical Education	15
Basic	15	Statistics	15	Physiology	15	Physical Education	15	Physical Education	15
Home Economics	15	Probability	15	Psychology	15	Physical Education	15	Physical Education	15
Spanish	15	Combinatorics	15	Education	15	Physical Education	15	Physical Education	15
Manual Arts	15	Number Theory	15	Physical Education	15	Physical Education	15	Physical Education	15
Physical Education	15	Group Theory	15	Physical Education	15	Physical Education	15	Physical Education	15
Art	15	Field Theory	15	Physical Education	15	Physical Education	15	Physical Education	15
Library	15	Algebraic Geometry	15	Physical Education	15	Physical Education	15	Physical Education	15
Art	15	Number Theory	15	Physical Education	15	Physical Education	15	Physical Education	15
Latin	15	Combinatorics	15	Physical Education	15	Physical Education	15	Physical Education	15
Psychology	15	Probability	15	Physical Education	15	Physical Education	15	Physical Education	15
Supervision	15	Statistics	15	Physical Education	15	Physical Education	15	Physical Education	15

This is a combined table of all subjects and hours of instruction. Subjects are listed in order of their importance to the student.

LETTER OF INQUIRY TO PRINCIPALS OF
NEW MEXICO HIGH SCHOOLS

Dear Sirs:

Excuse the form letter. It is explained by the fact that we are rushed here to get this out. Could you send me the following information in the next few days?

1. A copy of your daily schedule of high school classes including the names of the teachers.
2. The total high school enrollment as of March 1.
3. A copy of your daily schedule for each of the last five years, should you have the same on file.
4. Any subject combination you have found hard to fill, but also quite desirable for practical purposes.

If necessary, just pin a note with the enrollment and the desirable combination on to the daily schedule to make it convenient for you.

We are making a study of subject combinations taught by our state teachers.

Thanking you for this courtesy and cooperation, I am,

LETTER ON INQUIRY TO PRINCIPAL

NEW MEXICO HIGH SCHOOL

Dear Sirs:

Excuse the late letter. It is explained by the fact that we are rushed here to get this out. Could you send the following information in the next few days?

1. A copy of your daily schedule of high school classes including the names of the teachers.
2. The total high school enrollment as of March 1.
3. A copy of your daily schedule for each of the last five years, should you have the same on file.
4. Any subject combination you have found to fill, but also quite desirable for practical purposes.

If necessary, just give a note with the enrollment and the desirable combination as to the daily schedule to make it convenient for you.

We are making a study of subject combinations taught by our state teachers.

Thanking you for this courtesy and cooperation, I am,

COOPERATING SCHOOLS

Alamogordo	Encino
Allison-James (Santa Fe)*	Elida
Animas	Edith McCurdy Mission (Santa Cruz)*
Anthony Union High	Eunice
Artesia	Farley
Atarque	Farmington
Aztec	Field Consolidated (Melrose)*
Belen	Floyd
Bernalillo	Folsom
Capulin	Forrest
Carlsbad	Fort Summer
Cerrillos	Gallup
Capitan	Grant Union
Clayton	Grenville
Cloudercroft	Hagerman
Chama	Harwood Girls (Albuquerque)*
Clovis	Hatch Union
Colmor	Hobbs
Cuba	Hondo
Dawson	Hope
Deming	Hot Springs
Des Moines	Jal
Dexter	Kiowa (Cunico)*
Estancia	La Joya
Espanola	Las Cruces
Lake Arthur	Quay
Las Vegas	Quemado
Logan	Ramah
Lordsburg	Ranchvale (Clovis)*
Loretto Academy (Las Cruces)*	Raton
Lovington	Reserve Union
Magdalena	Richland
Menaul (Albuquerque)*	Roswell
Maxwell	Roy
Miami	Sacred Heart Academy (Waterflow)*
Mills	St. Mary's Academy (Silver City)*
Monticello	St. Vincent (Albuquerque)
Moreno Valley (Therma)*	Santa Cruz
Mosquero	Santa Fe
Mountainair	Santa Rosa
Nara Visa	Seneca
N. M. Military Institute	Sedan
(Roswell)*	

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N. M. State Teachers College	Solomon Luna (Los Lunas)*
(Silver City)*	
N. M. School for Blind	Springer
(Alamogordo)*	
Ojo Caliente	Stanley
Pecos	Taos
Penasco	Tatum
Pojuaque	Texico
Portales	Tierra Amarilla
Tularosa	Vaughn
Thoreau	Virden (Duncan, Arizona)*
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