A COMPARATIVE STUDY OF THE ANNUAL INSTRUCTIONAL PUPIL-SUBJECT COST IN FIVE CLASS A HIGH SCHOOLS WITH THE STANDARD COST OVER THE STATE, TOGETHER WITH AN ATTEMPT TO DETERMINE THE FACTORS THAT AFFECT PUPIL-SUBJECT COST

THESIS

Presented to the Graduate Council of the North Texas State Teachers College in Partial Fulfillment of the Requirements For the Degree of

MASTER OF ARTS

By

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McKinney, Texas

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A COMPARATIVE STUDY OF THE ANNUAL INSTRUCTIONAL PUPIL-SUBJECT COST IN FIVE CLASS A HIGH SCHOOLS WITH THE STANDARD COST OVER THE STATE, TOGETHER WITH AN ATTEMPT TO DETERMINE THE FACTORS THAT AFFECT PUPIL-SUBJECT COST

APPROVED:

[Signatures]

Major Professor

Minor Professor

Director of the Department of Education

Chairman of the Graduate Council
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CHAPTER I

INTRODUCTION

The subject of this study is the comparison of the annual instructional pupil-subject cost in five class A high schools and a determination of the factors in each school which affects its instructional cost, and finally, an attempt to set up criterion for determining the annual pupil-subject instructional cost in a high school in a city of from 5,000 to 25,000 population.

The study includes five class A high schools in Central North Texas, namely, McKinney, Gainesville, Sherman, Denison, and Bonham. The study is limited to the annual pupil-subject instructional cost alone in these schools and does not embrace any item or cost which belongs to any other branch of school cost. The annual instructional cost was determined by using the data which shows the status of the schools in the Spring semester of 1937-1938.

The data for this study were secured by personal visitation in the five schools and conferences with the superintendents and their secretaries, principals and their secretaries, and heads of the various departments. All data as to salaries, years experience, tenure, certificate, degree teacher holds, salary schedule, increases in salary, and
amount of supplies bought for the various departments were taken from the superintendents' files. An estimate of the amount of time the superintendent and principal spent in supervision of high school classes was secured from the superintendents and principals during a conference with them. In conference with the principals of the various schools information was secured regarding the daily schedule of classes, the size of classes, the teachers' daily load and the additional duties of the teachers which might affect instructional cost. The supply cost was obtained by a personal examination of the school ledgers.

The data secured from sources other than the schools were taken from The Biennial Report of the State Board of Education, 1934-1936; The Texas Almanac, The North Central Association Quarterly, The Bulletin of the State Department of Education on Standards and Activities of the Department of Supervision, Number 347, and The Twenty-Ninth Biennial Report of The State Department of Education.

In making the comparative study a complete analysis was made of the annual pupil-subject cost of instruction within each school on the basis of teachers salary, the size of classes, the cost of supervision affecting the classes in the high school, and the cost of supplies consumed in the particular class or department. This cost was determined for each class section in each course in each grade throughout each of
the schools. The series of tables 1-9 inclusive, show this per pupil cost together with the size of the class in each subject in each school. This comparison is presented in Chapter II.

In Chapter III the comparison is set up with the average per pupil cost of instruction in each course being compared against the average per pupil instructional cost in each of the other schools. This comparison is shown in Table I and in the Figures 1 to 9 inclusive.

In Chapter IV an attempt has been made to determine, from a study of the data obtained from each school, the factors which affect the annual per pupil-subject cost of instruction in each particular school. These factors were ranked in order of their influence in determining the instructional cost of that school in which the factor was present.

Chapter V shows the facts in each school as to the teacher-subject-pupil load with the name of each class taught, the size of each class, the total number of classes taught by each teacher and, finally, the total number of students taught by each teacher.

In Chapter VI an attempt was made to set up a criterion for determining a proper annual pupil-subject instructional cost for the schools in this study. Then a comparison is made between the average instructional cost per pupil in the schools covered in this study and a standard cost of instruc-
tion per pupil as set up by the recommendations of the Department of Education of Texas. This comparison results in the knowledge as to the validity of the per pupil instructional cost in the schools covered in this study.

The final Chapter, VII, contains the conclusions arrived at from this study of the per pupil cost of instruction in these five schools, the factors influencing per pupil instructional cost and a comparison of instructional cost per pupil in these five schools with the standard over the State. Also, included in this chapter are the recommendations which are thought necessary to adjust the discrepancies and bring about a more efficient and equitable per pupil cost of instruction in the schools involved in this study.

A word should be said for the need for studies of this nature. One of the most important duties of the school administrator is to check on the policies he is attempting to execute to see how well they are working and to note the results produced. The cost of instruction reduced to a per pupil basis, in the various subjects in the course of study offered in a school, is certainly a result of an administrative policy. The determination of such cost calls for an organized scientific compilation and utilization of information within a school. Only by so doing can an administrator check the results of his policies and determine the efficiency of his organization.
Reeder states:

The choosing of policies which have not grown out of complete information is likely to result in the foisting of vicious policies upon the school system; attempting to execute policies without having any statistics to serve as a guide is like unto attempting to steer a ship across the pathless waste of the ocean without chart and compass; and not to collect information which is calculated to show the efficiency of each school employee, each pupil, each material, and each process is to permit things to 'run themselves'—that would never do.¹

Throughout this thesis, the term per pupil instructional cost, always means the annual pupil-subject instructional cost.

CHAPTER II

AN ANALYSIS OF INSTRUCTIONAL PER PUPIL COST

IN FIVE HIGH SCHOOLS

It is the purpose of this chapter to show the annual per pupil cost of instruction in each section of each subject in each school included in this study. It will be born in mind that any cost shown or discussed is annual cost. In order to make the comparison of this cost in the later chapters, the schools are designated throughout this study as schools A, B, C, D, and E. The per pupil cost of instruction in each section of each subject in each school is shown in the Tables 1 to 9 inclusive. The per pupil instructional cost given in these tables includes a per pupil supervisory cost, and a per pupil supply cost which was determined in each school. The supervisory cost in each school was determined by taking the estimate of the time spent by the superintendent and the principal in supervising and prorating that estimated part of their salaries among all the pupils in the supervised classes. School A has a cost of supervision of $.16 per pupil; school B has a per pupil cost of supervision of $.24; school C has a per pupil cost of supervision of $.17; school D has a per pupil cost of supervision of $.23; and school E has a per pupil cost of supervision of $.20. The per pupil supply cost
is given in the following discussion of the sections and classes in which supplies were bought.

English

Table 1 shows the size and annual per pupil cost of instruction of each section of English in each of the schools included in this study.

School A offers ten sections of high eighth-grade English and one section of low eighth-grade English. These sections range in size from 33 to 38 students. The range in cost of instruction per pupil in eighth-grade English is from $10.48 to $11.68.

In the ninth grade there are nine sections of English offered. These sections range in size from 23 to 39 students. The range in per pupil cost of instruction in these sections is from $10.09 to $12.68.

In the tenth grade, there are according to Table 1, nine sections of English ranging from 24 to 30 students in size, and in per pupil cost of instruction from $9.76 to $12.18.

In the eleventh grade there are eight sections of English ranging in size from 27 to 31 students. These sections range in per pupil cost of instruction from $8.65 to $11.93.

Table 1 shows that there are ten sections of English offered in the eighth grade in school B. The range in size of these sections is from 30 to 36 students. The cost of instruction per pupil in these sections ranges from $5.49 to
There are nine sections of ninth-grade English offered in school B with the range in size of these sections from 21 to 32 students. The per pupil cost of instruction in these sections A and C is as follows:

<table>
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<th>Section</th>
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<td>32</td>
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Note: The table above shows the per pupil cost for sections A, B, and C. The costs are not visible in the image.
sections ranges from $7.80 to $12.34.

In school B nine sections of tenth-grade English are offered with the size of these sections ranging from 30 to 30 students. The per pupil cost of instruction in these sections ranges from $7.74 to $11.49.

In school B seven sections of eleventh-grade English are offered with the size of these sections ranging from 32 to 32 students. The cost of instruction per pupil in these sections ranges from $10.08 to $13.33.

In the eighth grade, school C offers eight sections of English. These sections range in size from 24 to 28 students. The cost of instruction per pupil ranges from $7.36 to $9.00. The cost of these sections is somewhat low due to the fact that these sections are taught by teachers in the Junior High School and are paid considerably less than are Senior High School teachers.

In the ninth grade, six sections of English are offered with a membership ranging from 17 to 32 students. The cost of instruction per pupil in these sections ranges from $7.43 to $13.13.

In the tenth grade, seven sections of English are offered with the range in size from 15 to 30 students. The cost of instruction per pupil in these sections ranges from $8.87 to $17.51.

In the eleventh grade, six sections of English are offered in school C with the range in size from 19 to 31 stu-
The cost of these sections ranges from $8.85 to $14.64 per pupil.

In eighth-grade English, school D offers seven sections ranging in size from 22 to 33 students. The cost of these sections ranges from $8.13 to $13.93 per pupil.

In ninth-grade English, school D offers six sections with the range in size from 20 to 33 students. The cost of instruction per pupil in these sections ranges from $7.55 to $14.62.

In tenth-grade English, six sections are offered with the range in size from 24 to 35 students. The cost of instruction per pupil ranges from $7.93 to $11.46.

In eleventh-grade English, school D offers six sections ranging in size from 26 to 34 students. The cost of these sections ranges from $7.63 to $9.91 per pupil.

In eighth-grade English, school E offers five sections ranging in size from 31 to 34 students. The cost of instruction per pupil ranges from $6.57 to $10.49.

In ninth-grade English, three sections are offered with the range in size from 19 to 34 students. The cost of instruction per pupil in these sections ranges from $7.34 to $12.99 per pupil.

In tenth-grade English, four sections are offered with the size ranging from 28 to 32 students. The cost of these sections ranges from $8.04 to $8.90 per pupil.
In eleventh-grade English, three sections are offered with the size ranging from 21 to 36 students. The cost of instruction per pupil in these sections ranges from $12.24 to $12.63.

History, Economics and Civics

Table 2 shows the size and annual per pupil cost of instruction of each section of history in each school included in this study.

In school A there are eleven sections of eighth-grade history with the size of these sections ranging from 19 to 31 students. The per pupil cost of instruction in these sections ranges from $7.55 to $13.69.

In ninth-grade history, there are three sections with the size ranging from 22 to 33 students. The range in per pupil cost of instruction in these sections is from $7.79 to $10.39.

In tenth-grade history, there are nine sections with the range in size from 17 to 33 students. These sections range in per pupil cost of instruction from $8.89 to $17.10. It should be noted here that the high per pupil cost of $17.10 is a section of 17 students in low tenth-grade history.

Table 2 shows that school A offers no history in the eleventh grade. This is explained by the fact that school A offers history in the eighth, ninth, and tenth grades, and economics and civics in the eleventh grade.
School B offers no eighth-grade history.

In the ninth grade, two sections of history are offered with a membership in each of the sections of 30 students and a cost per pupil of $7.74 in each section.

In the tenth grade, school B offers two sections of
history with a membership in each section of 29 students and a cost per pupil in each section of $10.48.

In the eleventh grade, school B offers six sections of history with a range in size from 27 to 34 students. The cost per pupil in these sections ranges from $8.75 to $11.91.

In eighth-grade history, school C offers five sections with the range in size from 28 to 29 students. The cost per pupil of these sections ranges from $7.63 to $10.31.

In the ninth grade, school C offers three sections of history with the smallest section having a membership of 17 and the largest section having 27 students. The cost of instruction per pupil in these sections ranges from $7.58 to $15.53.

School C offers no history in the tenth grade.

In the eleventh grade, school C has three sections of history ranging in size from 34 to 38 students. The cost of instruction per pupil in these sections ranges from $9.47 to $11.05.

In eighth-grade history, school D offers six sections with the range in size of the sections from 27 to 35 students. The per pupil cost of instruction in these sections ranges from $7.59 to $10.15.

In ninth-grade history, three sections are offered with the range in size from 23 to 34 students. The per pupil cost of instruction ranges from $7.68 to $10.70.

In tenth-grade history, school D offers five sections
ranging in size from 24 to 39 students. The cost of instruction per pupil of these sections ranges from $7.14 to $10.34.

In the eleventh grade no history is offered in school D.

In the eighth grade, school E offers no history.

In the ninth grade two sections of history are offered with the sizes 31 and 31 students, respectively. The cost of instruction per pupil in these sections is $8.63 and $12.63.

In the tenth grade, four sections of history are offered with the size ranging from 38 to 35 students. The per pupil cost of instruction in these sections ranges from $8.43 to $10.38.

School E offers no history in the eleventh grade.

Table 2 also shows the size and per pupil cost of instruction of each section of economics and civics in each school included in this study.

In school A, three sections of eleventh-grade economics are offered with the size of these sections ranging from 24 to 27 students. The cost of instruction per pupil in these sections ranges from $10.83 to $12.15.

School B offers one economics class in the eleventh grade, with a membership of 34 students and a per pupil cost of instruction of $9.52.

In the eleventh grade, school C has one class of economics with a membership of 30 students and a cost per pupil of $10.97.

In the eleventh grade, school D offers three sections of
economics with the range in size from 32 to 33 students. The per pupil cost of instruction in these sections ranges from $9.22 to $9.52.

In the eleventh grade, two sections of economics are offered in school E with the membership ranging from 32 to 30 students. The cost of instruction per pupil in these sections ranges from $8.90 to $12.06.

School A offers one class of eleventh-grade civics with a membership of 24 students and a per pupil cost of instruction of $12.16.

School B offers no civics course other than the course of community civics in the eighth grade.

School C offers three sections of civics with a range in size from 9 to 30 students. The cost per pupil of these sections ranges from $9.17 to $30.17.

In school D, no civics is offered.

In the eleventh grade, school E offers one class of civics with a membership of 29 students and a cost of instruction per pupil of $9.20.

Mathematics

Table 3 shows the size and per pupil cost of instruction of each section of mathematics in each school included in this study.

In eighth-grade algebra, school A offers ten sections with the range in size from 27 to 31 students. The per pupil
cost of instruction in those sections ranges from $9.39 to $10.83.

In ninth-grade algebra, there are six sections with the smallest section having a membership of 24 students and the larger section having 38 students. The range in cost of instruction per pupil in these sections is from $10.09 to $13.25.

In the tenth grade, school A offers three sections of plane geometry with the smallest section having 23 students and the largest having 37 students. These sections range in per pupil cost of instruction from $10.83 to $12.68.

In the eleventh grade, one section of trigonometry is offered with 29 students in membership. The cost of instruction per pupil is $11.68.

In eighth-grade general mathematics, school A offers two sections with a membership of 17 and 35 students, respectively. The cost per pupil for instruction in these two sections is $18.16 and $10.60, respectively.

In ninth-grade commercial arithmetic, school A offers two sections with a membership of 19 and 22 students, respectively. The per pupil cost of instruction in these sections is $14.27 and $13.31, respectively.

In eighth-grade algebra, school B offers one class with a membership of 33 students at a per pupil cost of instruction of $8.12.
In ninth-grade algebra, school B offers eight sections with the range in size of these sections from 17 to 33 students. The per pupil cost of instruction in these sections ranges from $7.83 to $18.77.

In plane geometry, school B offers five sections with a range in size from 37 to 33 students. The per pupil cost of instruction in these sections ranges from $9.34 to $11.34.

In the eleventh grade, school B offers one class of trigonometry with a membership of 33 students at a per pupil cost of instruction of $9.48.

School B offers nine sections of general mathematics in the eighth grade. The smallest section has 37 students and the largest has 35 students. The per pupil cost of these sections ranges from $7.34 to $11.57.

In eighth-grade algebra, school C offers six sections with the range in size from 10 to 27 students. The cost of instruction per pupil in these sections ranges from $7.43 to $19.97.

School C offers no classes in ninth-grade algebra.

School C offers one class of commercial arithmetic in the ninth grade with a membership of 23 students and a cost of instruction of $14.35 per pupil.

School C offers one class of business arithmetic in the ninth grade with a membership of 31 students and a per pupil cost of instruction of $9.50.

In the tenth grade, school C offers five sections of
plane geometry with the size of these sections ranging from 14 to 23 students. The cost of instruction per pupil of these sections ranges from $11.67 to $19.60.

In the eleventh grade, school C offers one class of trigonometry with a membership of 15 students and a per pupil cost of instruction of $18.13.

In the eleventh grade, school C offers one class of solid geometry with a membership of 4 students and a per pupil cost of instruction of $88.17.

In eighth-grade algebra, school D offers five sections with the range in size from 26 to 33 students. The cost of instruction per pupil in these sections ranges from $6.57 to $13.26.

In ninth-grade algebra, school D offers six sections with the range in size from 26 to 32 students. The cost of instruction per pupil in these sections ranges from $8.35 to $10.39.

School D offers six sections of plane geometry with the range in size of the sections from 25 to 34 students. The cost of instruction per pupil of these sections ranges from $12.82 to $8.73.

In the ninth grade, school D offers two sections of commercial arithmetic with 43 and 44 students, respectively. The per pupil cost of instruction in these sections is $5.73 and $5.90.

In eighth-grade algebra, school E offers five sections
with the range in size from 24 to 33 students. The cost of instruction per pupil in these sections ranges from $6.45 to $8.78.

In ninth-grade algebra, school E offers one class with a membership of 33 students and a cost of instruction per pupil of $9.98.

In the eleventh grade, one class of advanced algebra is offered with a membership of 19 students and a per pupil cost of instruction of $14.31.

In the tenth grade, two sections of plane geometry are offered with the size of the sections 21 and 31 students, respectively. The cost of instruction per pupil in these sections is $10.91 and $9.49.

In the ninth grade, one class of commercial arithmetic is offered with a membership of 36 students and a per pupil cost of instruction of $8.45.

Commercial Department

Table 4 shows the size and per pupil cost of instruction of each section of the courses offered in the commercial department in each school included in this study.

In the eighth grade, school A offers three sections of junior business training with the range in size from 18 to 35 students. The per pupil cost of instruction in these sections ranges from $10.14 to $14.26.

In the ninth grade, school A offers no commercial courses.
<table>
<thead>
<tr>
<th>Course</th>
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<th>SCHOOL B</th>
<th>SCHOOL C</th>
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<td>$0.84</td>
<td>12</td>
<td>$0.84</td>
<td>12</td>
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</tbody>
</table>

In the tenth grade, school A offers six sections of typing and one section of bookkeeping. The typing sections range in size from 34 to 28 students. The per pupil cost of instruction in these sections ranges from $11.34 to $8.39. The bookkeeping class has a membership of 12 students with a per pupil cost of instruction of $20.84.

In the eleventh grade, school A offers three sections of stenography and two sections of bookkeeping. The range in size of the stenography sections is from 19 to 22 students.
The per pupil cost of instruction of these sections ranges from $14.18 to $13.35. In the two bookkeeping sections there are 37 and 38 students, respectively. The per pupil cost of instruction in these sections is $9.41 and $9.08, respectively.

In school B, four sections in junior business training are offered in the eighth grade, two sections in the high eighth and two sections in the low eighth. In the two high eighth sections there are 36 students in each, with a per pupil cost of instruction of $9.49 for each section. The size of the low eighth sections is 16 students in the smaller section and 33 students in the larger section. The per pupil cost of instruction in these two sections is $9.52 for the larger section and $18.80 for the smaller section.

In the ninth grade, school B offers no commercial classes.

In the tenth grade, school B offers three sections of typing with the range in size from 37 to 45 students. The per pupil cost of instruction in these sections ranges from $6.54 to $4.60.

In the tenth grade, school B offers one class of bookkeeping with a membership of 36 students and a per pupil cost of instruction of $13.00.

In the eleventh grade, school B offers five sections of stenography and two sections of advertising. The range in the size of the stenography sections is from 18 to 31 students. The per pupil cost of instruction of these sections
ranges from $14.74 to $8.27. In the two advertising sections
the smaller section has a membership of 31 students and the
larger section has a membership of 33 students. The per
pupil cost of instruction in these sections is $8.66 and
$8.15, respectively.

In the eighth grade, school C offers two sections in
typing with the range in size from 26 to 34 students. The
cost of instruction per pupil in these sections ranges from
$9.03 to $8.44.

In the ninth grade, school C offers one class of typing
with a membership of 37 students and a per pupil cost of
instruction of $11.01.

In the tenth grade, school C offers one class of book-
keeping with a membership of 36 students and a per pupil cost
of instruction of $13.00.

In the eleventh grade, one class of stenography is
offered with a membership of 36 students and a per pupil cost
of $8.44.

In the ninth grade, school D offers no commercial sub-
jects.

In the tenth grade, school D offers one class of typing
with a membership of 31 students and a per pupil cost of in-
struction of $6.54.

In the eleventh grade, there are four sections of steno-
graphy with a range in size of the sections from 16 to 33
students. The per pupil cost of instruction in these sections has a range from $12.46 to $8.34.

In the eleventh grade two sections of bookkeeping are offered with the smaller section having a membership of 23 students and the larger section having 34 students. The per pupil cost of instruction in the smaller section is $14.54, while the cost of the larger section is $13.35 per pupil.

In the tenth grade, school A offers two sections of typing with the size ranging from 20 to 27 students. The cost of instruction per pupil ranges from $14.01 to $10.51.

In the eleventh grade, two sections of typing are offered with the size ranging from 24 to 28 students. The cost of instruction per pupil in these sections ranges from $11.76 to $10.81.

Foreign Language

Table 5 shows the size and per pupil cost of instruction of each section of foreign language in each of the schools included in this study.

In the eighth grade, school A offers one class of Latin with a membership of 30 students and a per pupil cost of instruction of $10.36.

In the ninth grade, school A offers two sections of Latin with a membership of 11 and 18 students, respectively. The per pupil cost of instruction in these sections is $27.98 and $17.16, respectively.
| Course | School A | | School B | | School C | | School D | | School E |
|--------|----------|--------|----------|--------|----------|--------|----------|--------|
|        | Class # | Unit Cost | Class # | Unit Cost | Class # | Unit Cost | Class # | Unit Cost | Class # | Unit Cost |
| 8th    |         |          |         |          |         |          |         |          |         |          |
| Latin  | 30      | $10.24   | 42      | $12.06   | 17      | $17.40   | 25      | $20.12   | 15      | $18.60   |
| French | 16      | $17.36   | 32      | $12.23   | 17      | $17.40   | 25      | $10.04   | 15      | $18.60   |
| Spanish| 17      | $18.16   | 17      | $14.40   | 17      | $17.70   | 25      | $10.04   | 15      | $18.60   |
| German | 17      | $18.16   | 17      | $14.40   | 17      | $17.70   | 25      | $10.04   | 15      | $18.60   |
| French | 17      | $18.16   | 17      | $14.40   | 17      | $17.70   | 25      | $10.04   | 15      | $18.60   |
| Spanish| 17      | $18.16   | 17      | $14.40   | 17      | $17.70   | 25      | $10.04   | 15      | $18.60   |

In the ninth grade, one class of Latin is offered with a membership of 17 students and a cost of instruction of $18.16 per pupil.

In the eighth grade, school B offers two sections of Latin with the smaller section having a membership of 14 students and the larger section 18 students. The per pupil cost of these sections is $18.67 and $14.57, respectively.

In ninth-grade Latin, one class is offered with a member-
ship of 33 students and a per pupil cost of $8.30.

In the eighth grade, school C offers two sections of Latin with the smaller section having a membership of 19 students and the larger section a membership of 23 students. The per pupil cost of instruction of the smaller section is $13.91 and of the larger section $11.56.

In the ninth grade, two sections of Latin are offered with the smaller section having a membership of 10 students and a larger section 17 students. The per pupil cost of the larger section is $15.52 and the per pupil cost of the smaller section is $26.37.

One class of eleventh-grade Latin is offered with a membership of 21 students and a per pupil cost of $12.80.

In the eighth grade, school D offers two sections of Latin with the smaller class having a membership of 20 students and the larger class 30 students. The per pupil cost of these sections is $15.07 and $10.13, respectively.

In ninth grade Latin, one class is offered with a membership of 38 students and a cost of $8.04 per pupil.

In the eleventh grade, one class of Latin is offered with a membership of 17 students and a per pupil cost of $17.70.

In the eighth grade, school E offers one class of Latin with a membership of 15 students and a cost of instruction per pupil of $14.80.
In the ninth grade, school E offers one class of Latin with a membership of 15 students and a cost of instruction per pupil of $14.60.

In the eighth grade, school A offers four sections of Spanish with the size ranging from 22 to 28 students. The cost of instruction per pupil in these sections ranges from $14.44 to $9.52.

In the ninth grade, school A offers four sections of Spanish with the range in size from 21 to 28 students. The cost of instruction per pupil in these sections ranges from $14.73 to $11.09.

In the tenth grade, school A offers one class of Spanish with a membership of 30 students and a per pupil cost of $15.48.

In the eighth grade, school B offers no Spanish.

In the ninth grade, school B offers three sections of high ninth Spanish and one section of low ninth Spanish. The range in size of the high sections is from 22 to 31 students. The per pupil cost of instruction in these sections ranges from $12.51 to $8.95. The low ninth section has a membership of 31 students and a per pupil cost of instruction of $13.00.

In the tenth grade, four sections of Spanish are offered with the range in size from 25 to 31 students. The per pupil cost of instruction in these sections ranges from $11.76 to $9.47.
One class of low eleventh-grade Spanish is offered with a membership of 17 students and a per pupil cost of instruction of $19.34.

In the eighth grade, school C offers five sections of Spanish with the range in size from 17 to 31 students. The cost of instruction per pupil in these sections ranges from $11.17 to $6.36.

In the ninth grade, school C offers four sections of Spanish with the range in size from 31 to 22 students. The cost of instruction per pupil in these sections ranges from $12.17 to $11.62.

In the tenth grade, one class of Spanish is offered with a membership of 15 students and a cost of instruction per pupil of $18.97.

In the eighth grade, school D offers no Spanish.

In the ninth grade, school D offers two sections of Spanish with the range in size from 24 to 33 students. The cost of instruction per pupil in these sections ranges from $13.35 to $9.77.

In the tenth grade, two sections of Spanish are offered with the smaller section having a membership of 26 students and the larger section 32 students. The cost of instruction per pupil in these sections is $12.26 and $10.36, respectively.

In the eighth grade, school E offers two sections of Spanish with a membership in each section of 21 students.
The per pupil cost of instruction is $12.63 in each of the sections.

In the ninth grade, school E offers two sections of Spanish with 19 to 24 students, respectively. The per pupil cost of these two sections is $13.92 and $11.08.

In the tenth grade, one class of Spanish is offered with a membership of 17 students and a cost of instruction per pupil of $15.55.

In the ninth grade, school C offers one class of French with a membership of 20 students and a per pupil cost of instruction of $13.67.

In the ninth grade, school D offers one class of French with a membership of 9 students and a per pupil cost of instruction of $33.22.

In the tenth grade, school D offers one class of French with a membership of 5 students and a per pupil cost of instruction of $41.82.

**Vocational Subjects**

Table 6 shows the size and the per pupil cost of instruction of each section of the vocational subjects in each of the schools included in this study. The cost given for home economics in school A includes a per pupil supply cost of $.80.

In the eighth grade, school A offers six sections of home economics with the range in size from 20 to 28 students.
The per pupil cost of instruction in these sections ranges from $13.10 to $9.61.

In the ninth grade, four sections of home economics are offered with the range in size from 13 to 22 students. The per pupil cost of instruction in these sections ranges from $19.71 to $13.46.

In the tenth grade, school A offers two sections of home economics with the smaller section having a membership of 24 students and the larger section 26 students. The per pupil cost of instruction in these sections is $13.34 and $12.46, respectively.
In the tenth grade, school A offers two sections of vocational biology. These sections have a membership of 25 and 27 students, respectively. The per pupil cost of instruction in these sections is $10.84 and $10.10, respectively. The cost given in school B for home economics includes a per pupil supply cost of $.89.

In the ninth grade, school B offers five sections of home economics with the range in size of these sections from 20 to 23 students. The per pupil cost of instruction in these sections ranges from $13.84 to $13.63.

In the tenth grade, two sections of home economics are offered with a membership of 18 and 26 students, respectively. The per pupil cost of instruction in these two sections is $16.31 and $10.72, respectively.

The cost given for home economics in school C includes a per pupil supply cost of $1.28.

In the eighth grade, school C offers two sections of home economics with the smaller class having a membership of 17 students and the larger class 28 students. The cost per pupil of these sections is $17.33 and $11.09, respectively.

In the ninth grade, one class of home economics is offered with a membership of 28 students and a cost of instruction per pupil of $10.58.

In the tenth grade, one class of home economics is offered with a membership of 19 students and a cost per pupil
of $15.66.

The cost given for home economics in school D includes a per pupil supply cost of $1.02.

In the eighth grade, school D offers three sections of home economics with the range in size from 23 to 28 students. The cost of instruction per pupil in these sections ranges from $10.70 to $8.90.

In the ninth grade, school D offers three sections of home economics with the range in size from 23 to 24 students. The cost of instruction per pupil in these sections ranges from $11.27 to $10.34.

The cost given for home economics in school E includes a per pupil supply cost of $1.31.

In the eighth grade, school E offers four sections of home economics with the range in size from 14 to 24 students. The per pupil cost of instruction in these sections ranges from $19.21 to $11.71.

In the ninth grade, three sections of home economics are offered with the size ranging from 22 to 24 students. The cost of instruction per pupil in these sections ranges from $17.71 to $11.71.

There are 55 students taking vocational agriculture in school A. The per pupil cost of instruction is $38.42.

There are 51 students taking vocational agriculture in school B. The per pupil cost of instruction is $59.06.
There are 56 students taking vocational agriculture in school C. The per pupil cost of instruction, including a supply cost of $ .49 per pupil, is $54.03.

School D offers no vocational agriculture.

There are 117 students taking vocational agriculture in school E. The per pupil cost of instruction is $38.88.

Science

Table 7 shows the size and the per pupil cost of instruction in each section of science in each of the schools included in this study. The cost given in Table 7 for school A includes a supply cost per pupil of $ .20 in chemistry, and $ .05 per pupil in physics, general science, and biology.

In the eighth grade, school A offers two sections of general science with the smaller section having a membership of 37 students and the larger section having 28 students. The per pupil cost of instruction in these two sections is $11.98 and $11.14, respectively.

In the ninth grade, school A has four sections of biology with the range in size from 18 to 28 students. The per pupil cost of instruction in these sections ranges from $19.31 to $11.14.

In the tenth grade, one section of physics is offered with a membership of 17 students, and a per pupil cost of instruction of $18.31.

In the eleventh grade, one section of chemistry is
TABLE 7

The per pupil cost of instruction in each section of all science courses, together with the size of each section in the schools included in this study.

<table>
<thead>
<tr>
<th>Course</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
<th>School D</th>
<th>School E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class Size</td>
<td>Unit Cost</td>
<td>Class Size</td>
<td>Unit Cost</td>
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<td>Science V</td>
<td>12</td>
<td>15.36</td>
<td>12</td>
<td>15.36</td>
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</tbody>
</table>

Offered with a membership of 23 students and a per pupil cost of instruction of $13.83.

The cost given in Table 7 for school B includes a supply cost per pupil of $1.83 in chemistry, a per pupil supply cost of $0.89 in biology, a per pupil supply cost of $0.96 in physics, and a per pupil supply cost of $0.84 in general science.

In the eighth grade, school B offers four sections of general science with the range in size in these sections from 26 to 30 students. The per pupil cost of these sections ranges from $13.48 to $9.04.

In the ninth grade, school B offers two sections in biology with the membership in the smaller class of 18 stu-
dents and the larger class 22 students. The per pupil cost
of these two sections is $17.69 and $14.63, respectively.

In the tenth grade, one class of physics is offered
with a membership of 36 students and a per pupil cost of
$13.24.

In the eleventh grade, two sections of chemistry are
offered with a membership of 16 and 17 students, respectively.
The cost of instruction per pupil in these two sections is
$31.75 and $30.59, respectively.

The cost given in Table 7 for school C includes a supply
cost per pupil of $.17 in all sections of science.

In the eighth grade, school C offers one class of gen-
eral science with a membership of 33 students and a cost of
instruction per pupil of $8.54.

In the ninth grade, two sections of biology are offered
with the range in size from 17 to 31 students, respectively.
The cost of instruction per pupil in these sections is
$17.99 and $9.05.

In the tenth grade, one class of physics is offered with
a membership of 19 students and a cost per pupil of $16.13.

In the eleventh grade, one class of chemistry is offered
with 37 students in membership and a per pupil cost of in-
struction of $11.45.

In the eleventh grade, one class of botany is offered
with a membership of 13 students and a cost of instruction
per pupil of $35.34.
The cost given in Table 7 for school D includes a per pupil supply cost of $.58 in general science, a per pupil supply cost of $.49 in biology, a per pupil supply cost of $.59 in physics, and a per pupil supply cost of $.59 in chemistry.

In the eighth grade, school D offers five sections in general science with the range in size from 18 to 28 students. The cost of instruction per pupil of these sections has a range from $14.30 to $8.84.

In the ninth grade, school D offers three sections in biology with the size ranging from 27 to 28 students. The cost of instruction per pupil in these sections ranges from $11.38 to $11.00.

In the tenth grade, two sections of physics are offered in school D with the size ranging from 12 to 23 students, respectively. The per pupil cost of instruction of these two sections is $30.96 and $11.75, respectively.

In the eleventh grade, three sections of chemistry are offered with the range in size from 23 to 28 students. The cost of instruction per pupil ranges from $12.04 to $11.03.

The cost given in Table 7 for school E includes a supply cost per pupil of $.16 in general science, a supply cost of $.19 per pupil in biology, a supply cost of $.52 per pupil in physics, and a supply cost of $.75 per pupil in chemistry.

In the eighth grade, school E offers three sections of general science with the range in size of these sections from
29 to 33 students. The per pupil cost of instruction of these sections ranges from $10.29 to $8.54.

In the ninth grade, school B offers three sections of biology with the range in size from 20 to 29 students. The per pupil cost of instruction of these sections ranges from $14.79 to $10.32.

In the tenth grade, school B offers one class of physics with a membership of 23 students and a cost of instruction per pupil of $15.46.

In the eleventh grade, three sections of chemistry are offered with the membership ranging from 20 to 27 students. The cost of instruction per pupil of these sections ranges from $14.45 to $10.95.

Manual Training

Table 8 shows the size and the per pupil cost of instruction of each section of manual training in each of the schools included in this study. There is no per pupil supply cost in sections of manual training in school A.

In the eighth grade, school A offers six sections of manual training with the range in size of these sections from 20 to 24 students. The cost of instruction per pupil in these sections ranges from $14.46 to $12.91.

In the ninth grade, there are six sections of manual training ranging in size from 18 to 27 students. The per pupil cost of instruction in these sections ranges from $11.48
### Table 8

The per pupil cost of instruction in each section of manual training, together with the size of each class in the schools included in this study.

<table>
<thead>
<tr>
<th>Group</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
<th>School D</th>
<th>School E</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Class Size</td>
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<td>24</td>
<td>12.96</td>
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</tbody>
</table>

To $18.16.

In the tenth grade, one class of manual training is offered with a membership of 24 students and with a per pupil cost of $12.91.

The cost given in Table 8 for school B includes a supply cost per pupil of $.50 in the manual training classes and $1.06 in the shop work classes. Mechanical drawing is shown in Table 8 as manual training 8. Shop work is shown in Table 8 as manual training 9. This was necessitated in order to make a comparison of the subjects.

In the eighth grade, school B offers five sections of manual training with a membership of 24 students in each of the sections. The per pupil cost of instruction in each of these sections is $12.91.
In the ninth grade, three sections of shop work are offered with the range in size from 23 to 34 students. The per pupil cost of instruction in these sections ranges from $14.99 to $14.43.

In the tenth grade, two sections of shop work are offered with the smaller section having a membership of 20 students and the larger section having a membership of 34 students. The per pupil cost of these two sections is $17.05 and $14.43, respectively.

The cost given in Table 8 for school C includes a per pupil supply cost of $1.00 in the sections of manual training.

In the eighth grade, school C offers three sections of manual training with the size of the section ranging from 16 to 19 students. The cost of instruction per pupil in these sections ranges from $17.95 to $14.33.

In the ninth grade, one class of manual training is offered with a membership of 19 students and a per pupil cost of instruction of $14.50.

The cost given in Table 8 for school D includes a per pupil supply cost of $1.23 in the sections of manual training.

In the eighth grade, school D offers three sections of manual training with the range in size from 17 to 30 students. The cost of instruction per pupil in these sections ranges from $18.75 to $15.97.
In the ninth grade, two sections of manual training are offered with a membership in the smaller section of 17 students and a membership in the larger section of 20 students. The cost of instruction per pupil ranges from $15.97 to $18.75.

The cost given in Table 8 for school E includes a per pupil supply cost of $.40 in the sections of manual training.

In the eighth grade, school E offers no classes in manual training.

In the ninth grade, school E offers three sections in manual training with the range in size from 19 to 21 students. The cost of instruction per pupil in these sections ranges from $14.71 to $14.10.

In the tenth grade, two sections of manual training are offered with the range in size from 19 to 21 students, respectively. The cost of instruction per pupil in these sections ranges from $14.71 to $14.10.

Other Subjects

Table 9 shows the size and the per pupil cost of instruction in classes, and sections of classes, which belong to no certain department and, for purposes of comparison, are classified as other subjects in this study.

In the ninth grade, school A offers one class of commercial law with a membership of 29 students and a per pupil cost of instruction of $11.68.
<table>
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<tr>
<th>Course</th>
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<td>2.21</td>
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</table>

In the ninth grade, school A offers two sections of commercial arithmetic with the smaller section having a member-
ship of 19 students and the larger section 23 students. The per pupil cost of these two sections is $14.27 and $13.25, respectively.

In the tenth grade, one class of public speaking is offered with a membership of 23 students and a per pupil cost of instruction of $9.94.

In the eleventh grade, school A offers two sections of public speaking with the smaller section having a membership of 20 students and the larger section having 23 students. The per pupil cost of instruction in these two sections is $11.41 and $9.94, respectively.

In physical education, school A has a membership of 450 boys with a per pupil cost of $3.58. In physical education for girls, there is a membership of 500 students with a per pupil cost of $3.16.

There are 45 students in the choral club with a per pupil cost of $6.00. The band has a membership of 35 students and a per pupil cost of instruction of $14.30. The glee club has a membership of 15 students and a per pupil cost of $16.73.

In the eighth grade, school B offers five sections of community civics with the range in size of these sections from 28 to 31 students. The cost of instruction per pupil in these sections ranges from $9.56 to $8.66.

In the ninth grade, school B offers four sections in
commercial geography with the range in size from 25 to 34 students. The cost of instruction per pupil in these sections ranges from $12.85 to $9.52.

In the ninth grade, school B offers one class of public speaking with a membership of 18 students and a cost of instruction per pupil of $17.80.

In debate, school B has a membership of 45 students with a cost of instruction per pupil of $13.86.

In band, school B has a membership of 114 students with the cost per pupil of $9.44. This cost includes a per pupil supply cost of $1.29.

In physical education for boys, school B has a membership of 156 students with a per pupil cost of $9.44. In physical education for girls there is a membership of 105 students with a cost of instruction of $9.21 per pupil.

In the ninth grade, school C offers one class of commercial law with a membership of 22 students and a per pupil cost of $12.44.

In the eleventh grade, school C offers one class of public speaking with a membership of 17 students and a cost of instruction per pupil of $15.52.

In the eleventh grade, school C offers one class of journalism with a membership of 19 students and a cost of instruction per pupil of $13.33.

In band, school C has a membership of 60 students with a
per pupil cost of instruction of $13.86. This cost includes a per pupil supply cost of $.52.

School D had no classes offered in the courses, which are designated for this study, as other subjects.

In the ninth grade, school E offers one class of commercial arithmetic with 36 students in membership and a per pupil cost of instruction of $6.45.

In the eleventh grade, school E offers one class of advanced algebra with a membership of 19 students and a cost of instruction of $14.31 per pupil.

In band, school E has a membership of 40 students with the cost of instruction per pupil of $33.69. This cost includes a per pupil supply cost of $.30. In the glee club, school E has a membership of 90 students. The per pupil cost of instruction is $14.45. This cost includes a per pupil supply cost of $.34.

Summary

In this chapter the aim has been to determine the size of classes or sections and the cost of instruction per pupil in each section of each subject in the five schools included in this study. The per pupil cost of instruction in each section of each subject was determined on the basis of the size of each section, the salary of the teacher, the per pupil cost of supervision, and the per pupil cost of supplies in those classes and sections where supplies were bought.
This per pupil cost of instruction is shown in Tables 1 to 9 inclusive.

Table 1 shows that there are 36 sections of high eighth-grade English offered in the five schools included in this study. The size of these sections ranges from a certain section in school E with 31 students to 34 students in a certain section in the same school. The per pupil cost of instruction in these 36 sections ranges from $8.57 in a certain section of school E to $13.93 in a certain section in school D, a difference of $7.36, making the per pupil cost in one section in school D more than twice the per pupil cost in a certain section in school E. The median cost per pupil in the 36 sections of English is $8.95.

In the ninth grade, there are 28 sections of English offered in the five schools with the range in size from 19 students in a certain section in school E to 34 students in a certain section in school E. The per pupil cost of instruction in these 28 sections ranges from $7.34 in a section in school E to $14.64 in a certain section in school D, a difference of $7.30, making the per pupil cost in one section in school D slightly less than twice the cost of a certain section in school E. The median per pupil cost in these sections is $9.82.

In the tenth grade, there are 27 sections of English offered in the five schools with a range in size from 15
students in one section in school C to 35 students in one section in school D. The per pupil cost ranges from $7.93 in one section in school D to $17.51 in one section in school C, a difference of $9.58, making the per pupil cost in one section in school C more than twice the per pupil cost in a certain section in school D. The median cost per pupil in the 28 sections of English is $10.63.

In the eleventh grade, there are 24 sections of English offered in the five schools with the range in size from 19 students in a section in school C to 34 students in a section of school D. The per pupil cost of these 24 sections ranges from $7.63 in a certain section in school D to $14.64 in one section in school C, a difference of $7.01, making the per pupil cost in one section in school C almost twice the cost in a certain section in school D. The median cost per pupil in the 24 sections of English is $10.14.

The medians of the per pupil cost of instruction in English in each grade are: eighth grade, $8.98; ninth grade, $9.82; tenth grade, $10.63; and the eleventh grade, $10.14.

Table 2 shows that there are 19 sections of high eighth-grade history offered in the five schools included in this study, with the range in size from 19 students in one section in school A to 35 students in one section in school D. The per pupil cost of these 19 sections ranges from $7.59 in a certain section in school D to $13.69 in one section in
school A, a difference of $8.10, making the per pupil cost of one section in school A almost twice the per pupil cost of one section in school D. The median per pupil cost in these 19 sections is $10.17.

In the ninth grade, there are 13 sections of history offered in the five schools with the range in size from 17 students in one section in school C to 33 students in one section in school A. The per pupil cost of these 13 sections ranges from $7.58 in a certain section in school C to $15.53 in another section in the same school, a difference of $7.94. The per pupil cost of instruction of one section of ninth-grade history in school C was more than twice the cost of another section in the same grade in the same school. The median per pupil cost of instruction in these 13 sections is $10.39.

In the tenth grade, there are 19 sections of history offered in the five schools with the range in size from 24 students in one section in school A to 39 students in a certain section in school D. The per pupil cost of instruction in these 19 sections ranges from $7.14 in one section in school D to $11.68 in a certain section in school A, a difference of $4.54. The median per pupil cost of these 19 sections is $9.73.

In the eleventh grade there are eight sections of history offered in the five schools with the range in size from 34
students in a certain section in school 0 to 34 students in one section in school B. The per pupil cost of instruction in these five sections ranges from $9.47 in a certain section in school 0 to $11.91 in one section in school B, a difference of $2.44. The median per pupil cost in these eight sections is $10.81. The medians of per pupil cost in each grade in history are: eighth grade, $10.17; ninth grade, $10.39; tenth grade, $9.73; and eleventh grade, $10.81.

Table 2 also shows that there are 10 sections in economics offered in the five schools with the range in size from 24 students in a certain section in school A to 34 students in one section in school B. The per pupil cost of instruction in these 10 sections ranges from $8.90 in one section in school E to $13.16 in a certain section in school A, a difference of $3.26. The median per pupil cost of instruction in these ten sections is $10.41. Table 2 shows further that there are five sections of civics offered in the five schools with the range in size from 9 students in a certain section in school 0 to 30 students in a certain section in school 0. The per pupil cost of instruction in these five sections ranges from $9.17 in one section in school 0 to $30.17 in another section in the same school. The median per pupil cost of instruction in these five sections is $14.29.

Table 3 shows that there are 23 sections of high eighth-
grade algebra offered in the five schools included in this study with the range in size from 17 students in one section in school C to 33 students in one section in school E. The per pupil cost of instruction in these 23 sections ranges from $8.45 in a certain section in school E to $15.70 in a certain section in school C, a difference of $9.25, making the per pupil cost of one section in school C approximately 2.5 times the per pupil cost of one section in school E. The median per pupil cost in these 23 sections is $9.43.

In the ninth grade, there are 19 sections of algebra offered in the five schools with the range in size from 17 students in a certain section in school B to 32 students in a certain section in school D. The per pupil cost of instruction in these 19 sections ranges from $8.08 in one section in school D to $18.77 in one section in school B, a difference of $10.69, making the per pupil cost of one section in school B 2.3 times the cost of one section in school D. The median per pupil cost of these 19 sections is $10.69.

In the tenth grade, there are 20 sections of plane geometry offered in the five schools with the range in size from 14 students in a certain section in school C to 37 students in one section in school D. The per pupil cost in these 20 sections ranges from $8.73 in one section in school D to $19.60 in one section in school C, a difference of
$10.87, making the per pupil cost in one section in school C 2.3 times the cost of one section in school D. The median per pupil cost of these 20 sections is $11.74.

In the eleventh grade, there are four sections of trigonometry and one section of solid geometry offered in the five schools. The sections in trigonometry range in size from 15 students in one section in school C to 33 students in one section in school B. The per pupil cost of instruction in these four sections ranges from $9.48 in a certain section in school B to $18.13 in one section in school C, a difference of $8.65, making the per pupil cost of one section in school C almost twice the cost of one section in school B. The median per pupil cost in these four sections is $12.17. The size of the one section of solid geometry, which is offered in school C, is 4 students and the per pupil cost is $68.17. This per pupil cost is 4.5 times the maximum per pupil cost for instruction used as a standard in this study, and 5.5 times the median per pupil cost in the four sections of trigonometry offered in the five schools in the same grade.

In the high eighth grade, there are 12 sections of general mathematics offered in the five schools with the range in size from 17 students in a certain section in school A to 35 students in a certain section in school B. The per pupil cost of instruction in these 12 sections ranges from $7.44 in one section in school C to $18.18 in one section in
school A, a difference of $10.72, making the per pupil cost of one section in school A 3.5 times the cost of one section in school C. The median per pupil cost of instruction in these 13 sections is $9.96.

In the ninth grade, there are 7 sections of commercial arithmetic offered in the five schools with the range in size from 19 students in one section in school A to 44 students in one section in school D. The per pupil cost of instruction in these 7 sections ranges from $5.73 in one section in school D to $14.35 in one section in school C, a difference of $8.62. The per pupil cost of one section in school C is 2.6 times the cost of one section in school D. The median per pupil cost of these 7 sections is $9.92.

The medians of the per pupil cost of instruction in mathematics in each grade are: eighth-grade algebra, $9.43; eighth-grade general mathematics, $9.96; ninth-grade algebra, $10.69; ninth-grade commercial arithmetic, $9.93; tenth-grade plane geometry, $11.74; eleventh-grade trigonometry, $12.17; and eleventh-grade solid geometry, $88.17. These medians indicate that the per pupil cost is consistent in the eighth, ninth, and tenth grades, but varies considerably in the eleventh grade, with the cost per pupil of the solid geometry excessively high.

Table 4 shows that there are 7 sections of high eighth-grade junior business training offered in the five schools
with the range in size from 18 students in one section in school A to 36 students in one section in school C. The per pupil cost of these 7 sections ranges from $8.44 in one section in school C to $14.26 in one section in school A, a difference of $5.82. The median per pupil cost of instruction in these 7 sections is $10.23.

In the tenth grade, there are 13 sections of typing offered in the five schools with the size ranging from 30 students in a certain section in school F to 45 students in one section in school B. The per pupil cost of instruction in these 13 sections ranges from $4.60 in one section in school B to $14.01 in one section in school E, a difference of $9.41. The per pupil cost of instruction in one section in school E is more than twice the cost of one section in school B. The median per pupil cost of these 13 sections is $8.94.

In the eleventh grade, there are 13 sections in stenography offered in the five schools with the range in size from 18 students in one section in school B to 36 students in one section in school C. The per pupil cost of instruction in these 13 sections ranges from $8.34 in a certain section in school D to $14.74 in one section in school C, a difference of $6.40. The per pupil cost of one section in school C is 2.2 times the cost in one section in school D. The median per pupil cost of these 13 sections is $10.81.
The medians of the per pupil cost of instruction in the commercial courses in each grade are: eighth grade, $10.23; tenth grade, $8.94; and eleventh grade, $10.81.

Table 5 shows that there are 8 sections of high eighth-grade Latin offered in the five schools with the range in size from 14 students in one section in school B to 30 students in one section in school D. The per pupil cost of these 8 sections ranges from $10.12 in one section in school D to $18.87 in one section in school B, a difference of $8.75. The median of the per pupil cost in these 8 sections of Latin is $13.61.

In the ninth grade, there are 7 sections of Latin offered in the five schools with the range in size from 10 students in one section in school C to 38 students in one section in school D. The per pupil cost of these 7 sections ranges from $8.04 in school D to $27.98 in one section in school A, a difference of $19.94. The per pupil cost of one section in school A is 3.5 times the cost of one section in school D. The median per pupil cost in these 7 sections in Latin is $18.84.

The medians of the per pupil cost in Latin in the five schools in each grade are: eighth grade, $13.61; and ninth grade, $16.84.

In the eighth grade, there are 11 sections of Spanish offered in the five schools with the range in size from 17 students in one section in school C to 31 students in one
section in school C. The per pupil cost of these 11 sections ranges from $6.56 in one section in school C to $14.44 in a certain section in school A, a difference of $7.88. The per pupil cost of one section in school A is more than twice the cost of one section in school C. The median per pupil cost in these 11 sections is $9.37.

In the ninth grade, there are 14 sections of Spanish offered in the five schools with the range in size from 19 students in a certain section in school E to 31 students in one section in school B. The per pupil cost of instruction in these 14 sections ranges from $8.95 in a certain section in school B to $14.73 in a certain section in school A, a difference of $5.78. The median per pupil cost of these 14 sections is $11.83.

In the tenth grade, there are eight sections of Spanish offered in the five schools with the range in size from 15 students in one section in school C to 32 students in one section in school D. The per pupil cost of instruction in these 8 sections ranges from $9.47 in one section in school B to $16.97 in a certain section in school C, a difference of $7.50. The median per pupil cost of these 8 sections is $12.47.

The medians of per pupil cost of instruction in Spanish in each grade are: eighth grade, $9.37; ninth grade, $11.83; and tenth grade, $12.47.

Table 6 shows that there are 14 sections of home eco-
nomics offered in the five schools with the range in size from 14 students in one section in school E to 28 students in one section in school C. The per pupil cost of instruction in these 14 sections ranges from $8.90 in one section in school D to $19.31 in a certain section in school E, a difference of $10.31. The per pupil cost of one section in school E is more than twice the cost of one section in school D. The median per pupil cost in these 14 sections is $13.27.

In the ninth grade, there are 13 sections of home economics offered with the range in size from 12 students in a certain section in school A to 24 students in a certain section in school E. The per pupil cost of instruction in these 13 sections ranges from $10.34 in one section in school D to $19.71 in one section in school A, a difference of $8.87, making the per pupil cost of one section in school A cost almost twice one section in school D. The median per pupil cost of these 13 sections is $13.78.

In the tenth grade, there are 6 sections of home economics with the range in size from 13 students in a certain section in school E to 26 students in a certain section in school B. The per pupil cost of instruction in these 6 sections ranges from $10.72 in one section in school B to $29.10 in a certain section in school E, a difference of $18.39. The per pupil cost of one section in school E is
slightly less than three times the cost of one section in school B. The median per pupil cost in these 6 sections is $19.09.

The medians of per pupil cost of instruction in home economics in each grade are: eighth grade, $13.27; ninth grade, $13.78; and tenth grade, $19.09. This indicates that the per pupil cost of instruction in the eighth grade and the ninth grade is consistent but that the cost of instruction per pupil in the tenth-grade home economics is high, being $4.09 above the standard used in this study for per pupil cost of instruction in a subject.

Table 7 shows that there are 14 sections of general science offered in the five schools included in this study with a range in size from 18 students in a certain section in school D to 33 students in one section in school E. The per pupil cost of instruction in these 14 sections ranges from $8.54 in one section in school E to $14.30 in one section in school D, a difference of $5.76. The median per pupil cost of these 14 sections is $10.53.

In the ninth grade, there are 14 sections in biology offered in the five schools with the range in size from 18 students in a certain section in school A to 31 students in a certain section in school C. The per pupil cost of these 14 sections ranges from $9.05 in one section in school C to $19.31 in a certain section in school A, a difference of
$9.96, making the per pupil cost of one section in school A more than twice the cost of one section in school C. The median per pupil cost of instruction in these 14 sections is $13.39.

In the tenth grade, there are 10 sections of chemistry offered in the five schools with the range in size from 16 students in a certain section in school B to 28 students in one section in school D. The per pupil cost of instruction in the 10 sections ranges from $10.95 in one section in school E to $31.75 in a certain section in school B, a difference of $10.80. The per pupil cost of one section in school B is almost twice the cost in one section in school E. The median per pupil cost in these 10 sections is $14.36.

In the eleventh grade, there are 6 sections of physics offered in the five schools with the range in size from 13 students in a certain section in school D to 26 students in a certain section in school B. The per pupil cost of instruction in these 6 sections ranges from $11.75 in one section in school D to $20.96 in a certain section in school D, a difference of $9.21. The median per pupil cost of these 6 sections is $15.96.

The medians of the per pupil cost of instruction in science in each grade are: eighth grade, $10.53; ninth grade, $13.39; tenth grade, $14.26; and in the eleventh grade, $15.96.
Table 8 shows that there are 13 sections of manual training offered in the eighth grade in the five schools with the range in size from 16 students in a certain section in school C to 24 students in one section in school B. The per pupil cost in these 13 sections ranges from $13.16 in a certain section in school A to $18.75 in a certain section in school D, a difference of $5.59. The median per pupil cost of instruction in these 13 sections is $14.93.

In the ninth grade, there are 12 sections of shop work offered in the five schools with the range in size from 16 students in a certain section in school A to 24 students in a certain section in school B. The per pupil cost of instruction in these 12 sections ranges from $12.16 in a certain section in school A to $18.75 in a certain section in school D, a difference of $6.59. The median per pupil cost of these 12 sections is $15.39.

In the tenth grade, there are 5 sections of manual training offered in the five schools with the range in size from 19 students in a certain section in school E to 24 students in one section in school A. The per pupil cost in these sections ranges from $12.91 in one section in school A to $17.05 in a certain section in school B, a difference of $4.14. The median per pupil cost of instruction in these 5 sections is $14.64.

The medians of per pupil cost of instruction in manual
training in each grade are: eighth grade, $14.93; ninth grade, $15.39; and the tenth grade, $14.64.

Table 9 shows the subjects offered in the five schools included in this study which, for purposes of this study, are designated as other subjects. Since these subjects are not offered in more than one of the five schools, a range in per pupil cost, and a median of the sections, cannot be determined in this summary as has been done in the other subjects.
CHAPTER III

THE COMPARISON OF THE AVERAGE INSTRUCTIONAL COST IN EACH SCHOOL

It is the purpose of this chapter to compare the average instructional cost per pupil in each subject in each of the five schools included in this study.

The average per pupil instructional cost of each section in each subject in each school is shown in Table 10. In the summary to this chapter the Figures 1 to 9 inclusive, show the comparative average cost of these subjects in graph form.

Table 10 shows the average instructional cost per pupil in eighth-grade English to range from $8.07 in school C to $11.54 in school B, a difference of $3.47. School A has an average per pupil cost in English of $11.61, school D has an average per pupil cost of $10.61, and school E has an average per pupil cost of $8.11.

In ninth-grade English, school A with an average per pupil cost of $11.31 has the highest average per pupil cost of instruction and school E, with an average per pupil cost of $9.22, has the lowest, a difference of $1.99. School C has an average per pupil cost of $10.82, school D an average per pupil cost of $9.81, and school B an average per pupil cost of $9.73.

In tenth-grade English, the range in average instructional
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per pupil cost is from $8.54 in school E to $11.53 in school C, or a difference of $2.99. School A has an average per pupil cost of $11.20, school D has an average per pupil cost of $9.91, and school B has an average per pupil cost of $9.19.

In eleventh-grade English the range in average instructional cost per pupil is from $7.83 in school B to $11.69 in school C, a difference of $3.86. School E has an average per pupil cost of $11.68; school A, $10.58; and school D, $9.11.

Table 10 shows the range in average per pupil instructional cost in eighth-grade history to be from $8.47 in school C to $11.07 in school A, a difference of $2.60. School D with a per pupil cost of $9.09 was the only other school to offer eighth-grade history.

The average cost of instruction per pupil in ninth-grade history ranged from $7.74 in school B to $10.63 in school E, a difference of $2.89. School C has a per pupil cost of $10.30, school D a per pupil cost of $9.46, and school A a per pupil cost of $9.02.

The average per pupil instructional cost in history in the tenth grade ranged from $8.77 in school D to $11.35 in school A, a difference of $2.58. School B has a per pupil cost of $10.48 and school E has a per pupil cost of $9.21. School C offered no tenth-grade history.

School B and school C were the only schools to offer eleventh-grade history. The average cost of instruction per
pupil in school B was $10.66, while in school C it was $10.37, a difference of $.39.

Table 10 shows the range in average per pupil cost of instruction in eighth-grade Spanish to be from $10.11 in school A to $12.63 in school E, a difference of $2.52. School C with a per pupil cost of $10.66 was the only other school to offer eighth-grade Spanish.

In ninth-grade Spanish, the average cost of instruction ranges from $10.93 in school B to $12.80 in school A, a difference of $1.87. School E has an average per pupil cost of $12.50; school C, $12.04; and school D, $11.56.

In tenth-grade Spanish, the average cost of instruction ranges from $10.32 in school B to $12.97 in school C, a difference of $6.65. School E has an average per pupil cost of $15.55, school A an average per pupil cost of $15.46, and school D an average per pupil cost of $11.16.

The average cost of instruction per pupil in eighth-grade general science ranges from $8.83 in school C to $11.55 in school A, a difference of $2.73. School B has an average per pupil cost of $11.05, school D an average per pupil cost of $10.59, and school E an average per pupil cost of $9.28.

In ninth-grade biology, the average per pupil instructional cost ranges from $11.25 in school D to $16.16 in school B, a difference of $4.81. School A has an average per pupil cost of instruction of $14.38; school C, $13.53; and
school E, $11.81.

In tenth-grade physics the average per pupil cost of instruction ranges from $13.34 in school B to $18.31 in school A, a difference of $4.97. School D has an average per pupil cost of $16.36, school C an average per pupil cost of $16.13, and school E an average per pupil cost of $15.46.

In eleventh-grade chemistry, the range in average per pupil cost is from $11.45 in school C to $21.17 in school B, a difference of $9.72. School E has an average per pupil cost of $13.28, school A has an average per pupil cost of $13.82, and school D an average per pupil cost of $11.70.

The average cost of instruction per pupil in eighth-grade home economics ranges from $9.75 in school D to $18.34 in school B, a difference of $8.59. School E has an average per pupil cost of $15.46, school C an average per pupil cost of $14.31, and school A an average per pupil cost of $11.45.

In ninth-grade home economics, the range in average cost of instruction per pupil is from $10.59 in school C to $16.27 in school A, a difference of $5.68. School E has an average per pupil cost of $14.31; school B, $13.47; and school D, $10.79.

In tenth-grade home economics, the range in average per pupil cost is from $12.90 in school A to $24.74 in school E, a difference of $11.84. School C has an average per pupil cost of $15.86 and school B an average per pupil cost of $13.52. School D does not offer home economics in the tenth
In eleventh-grade economics, the average cost of instruction per pupil has a range from $9.32 in school D to $11.48 in school A, a difference of $2.16. School C has an average per pupil cost of $10.97, school E an average per pupil cost of $10.48, and school B an average per pupil cost of $9.52.

Table 10 shows the average instructional cost per pupil of eighth-grade algebra to range from $7.45 in school E to $13.17 in school C, a difference of $5.72. School A has an average per pupil cost of $10.19, school B an average per pupil cost of $9.42, and school D an average per pupil cost of $8.95.

In ninth-grade algebra, the average per pupil cost of instruction ranges from $8.23 in school E to $12.23 in school A, a difference of $4.01. School B has an average per pupil cost of $10.59 and school D an average per pupil cost of $9.39. School C does not offer ninth-grade algebra.

In tenth-grade plane geometry, the average per pupil cost of instruction ranges from $10.08 in school B to $13.88 in school C, a difference of $3.80. School A has an average per pupil cost of $11.58, school D an average per pupil cost of $10.32, and school E an average per pupil cost of $10.20.

The average cost of instruction per pupil in general mathematics ranges from $7.89 in school B to $14.38 in school A, a difference of $6.49. School C has an average per pupil cost of $9.71. Schools D and E do not offer general mathe-
In trigonometry, the average instructional cost per pupil ranges from $9.78 in school B to $18.13 in school C, a difference of $8.35. School A has an average per pupil cost of $11.68. Schools D and E do not offer trigonometry.

School C offers one section in solid geometry at a per pupil cost of $88.17.

Table 10 shows the average per pupil cost of instruction in eighth-grade Latin to range from $10.36 in school C to $18.62 in school B, a difference of $8.26. School E has an average per pupil cost of $14.80, school C an average per pupil cost of $13.72, and school D an average per pupil cost of $12.59.

In ninth-grade Latin, the range in average per pupil cost of instruction is from $8.04 in school D to $32.57 in school A, a difference of $24.53. School C has an average per pupil cost of $20.89; school E, $14.60; and school B, $8.30.

School A was the only school offering Latin in the tenth grade. The per pupil cost of instruction in that class was $18.16.

In the eleventh grade, schools D and C offered Latin with the average per pupil cost of instruction in school C being $13.60 and in school D of $17.70, a difference of $4.10.

The range in eighth-grade typing is from $8.74 in school C to $11.42 in school A, a difference of $2.68. School B has
an average per pupil cost of $11.33. Schools D and E offer no typing in the eighth grade.

In ninth-grade typing, school C has an average per pupil cost of $11.01 and school E has an average per pupil cost of $14.45. Schools A, B, and D offer no typing in the ninth grade.

In tenth-grade typing, the range in average per pupil instructional cost is from $4.73 in school B to $13.00 in school C, a difference of $8.28. School E has an average per pupil cost of $12.26 and school A an average per pupil cost of $9.31. School D offers no typing in the tenth grade.

School E has an average per pupil cost of typing in the eleventh grade of $11.33. Schools A, B, C, and D offer no typing in the eleventh grade.

Table 10 shows the average per pupil instructional cost in bookkeeping in the tenth grade to range from $11.66 in school B to $30.84 in school A, a difference of $9.18. School C has an average per pupil cost of $13.00. Schools D and E offer no bookkeeping in the tenth grade.

In eleventh-grade bookkeeping, the range in average per pupil cost is from $9.35 in school A to $13.95 in school B. No other schools offer classes in eleventh-grade bookkeeping.

The average per pupil instructional cost in eleventh-grade stenography, or shorthand, ranges from $8.44 in school C to $14.13 in school A, a difference of $5.69. School D has an average per pupil cost of $9.28 and school B an aver-
age per pupil cost of $8.41. School E offers no stenography in the eleventh grade.

Table 10 shows the average per pupil cost of instruction in several subjects which cannot be used for comparative purposes due to the fact that there is usually only one class offered, or that the subject is offered in only one school. This being the case, nothing could be gained by a comparison. For purposes of this study such subjects and their cost are placed in the tables and not treated in the comparison.

In this chapter the aim was to compare the average per pupil instructional cost in each subject in each school used in this study with the same cost in each of the other schools. This comparison was made by showing in Table 10 the actual average per pupil cost in each subject offered in each school as against the cost of the same subject in each of the other schools. To make the comparison more complete the Figures 1 to 9 inclusive, show the range of the average per pupil cost in each subject in each school as against the average per pupil cost in the same subject in each of the other schools included in this study.

Figure 1 shows that the average per pupil cost of instruction in all sections of English in each of the five schools is fairly consistent and that the variations from school to school is not very great.
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Figure 1.—The comparison of the average per pupil instructional cost of all sections of English in each grade in the schools included in this study.

Figure 2 shows that the average per pupil instructional cost in history is consistent in each school and that the variations from school to school is slight. In civics, however, the per pupil cost of instruction in school C seems to be excessive when compared with the per pupil cost of instruction in schools A and E.

Figure 3 shows that Spanish is consistent in average per pupil instructional cost in the eighth and ninth grades, but varies in the tenth grade. The per pupil cost in French is
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Figure 3.—The comparison of the average per pupil instructional cost of all sections of history and civics in each grade in the schools included in this study.

high as is shown by the Figure 3.

Figure 4 shows that most of the science sections are of about the same range in average instructional cost per pupil in the eighth and ninth grades. There are, however, some irregularities in the tenth-grade physics and eleventh-grade chemistry.

Figure 5 shows that there is a wide disparity in the
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**Figure 3.**—The comparison of the average per pupil instructional cost of all sections of Spanish and French in each grade in the schools included in this study.

The average cost of instruction per pupil in the home economics sections in each grade. These variations were caused, in most cases, by variation in class size, and in the supply cost in this department. The per pupil costs in economics, as shown in Figure 5, are very consistent in each school.

Figure 6 shows that the average per pupil instructional cost in algebra is fairly consistent in the eighth and ninth
Figure 4.—The comparison of the average per pupil instructional cost of all sections of science in each grade in the schools included in this study.

grades with the variations from school to school very slight, with the possible exception of algebra in the eighth grade in school C. In general mathematics, offered in schools A, B, and C, the average per pupil cost is consistent in schools B and C but high in school A. In tenth-grade plane geometry, the average instructional cost per pupil is very consistent in schools B, D, and E, but varies considerably in schools A and C. In commercial arithmetic, the average per pupil cost in schools A and C seems to be excessive when compared to
<table>
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Figure 5.—The comparison of the average per pupil instructional cost of all sections of home economics, and economics, in each grade in the schools included in this study.

the per pupil cost in schools D and E. In advanced algebra, offered only in schools D and E, the per pupil cost is consistently high in each school. In trigonometry, offered in schools A, B, and C, the average per pupil cost of instruction is consistent in schools A and B, but is high in school C.

Figure 7 shows that the average per pupil instructional cost in Latin varies considerably from school to school in the eighth grade, with the per pupil cost in school B appar-
Figure 6.—The comparison of the average per pupil instructional cost of all sections in mathematics in each grade in the schools included in this study.
<table>
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Figure 7.—The comparison of the average per pupil instructional cost of all sections of Latin in each grade in the schools included in this study.

ently excessive when compared with the other schools. In the ninth grade, there is a marked variation in the average per pupil instructional cost with the cost in schools A and C very high when compared with the per pupil cost in schools B and D. The cost in school E is fairly high but not excessive. In the tenth grade, school A is the only school to offer Latin with the average per pupil instructional cost high when compared with the standard used in this study for per pupil cost in a subject. In the eleventh grade, schools C and E offered Latin
with the average per pupil instructional cost normal in school C but high in school D.

Figure 8 shows that the average per pupil instructional cost in junior business training in the eighth grade varies only slightly from school to school. In ninth-grade typing, offered only in schools C and E, the average instructional per pupil cost is normal in school C but fairly high in school E. In the tenth grade, the per pupil instructional cost is normal in schools A, C, and E, but is low in schools B and D. This is explained by the fact that the classes in schools B and D in this subject were very large. In tenth-grade typing, offered only in school E, the average per pupil cost was normal. In the tenth grade, the average per pupil cost of instruction in bookkeeping is excessive in school A when compared with schools B and C. In the eleventh grade, the average instructional cost per pupil was consistent in schools A and D in bookkeeping. No other schools offered bookkeeping in the eleventh grade. In the eleventh grade, the average instructional per pupil cost in stenography was excessive in school A when compared with the per pupil cost in schools B and C.

Figure 9 shows that the average per pupil cost of instruction in eighth-grade manual training was consistently high in all schools, particularly in schools C and D. School A, the only school offering manual training in the ninth grade, has a normal average per pupil cost of instruction. In the tenth
Figure 8.—The comparison of the average per pupil instructional cost of all sections of typing and bookkeeping in each grade in the schools included in this study.
Figure 9.—The comparison of the average per pupil instructional cost of all sections of manual training in each grade in the schools included in this study.

grade, the average instructional per pupil cost is average in schools A and E. No other schools offered manual training in the tenth grade. In the eighth grade, the average instructional per pupil cost was consistent in schools A and B in shop work. Schools C, D, and E offered no classes in shop work in the eighth grade. In the ninth grade, the average instructional per pupil cost was consistently high in all the schools with the variation very slight.
CHAPTER IV

THE FACTORS WHICH INFLUENCE INSTRUCTIONAL COST PER PUPIL

It is the purpose of this chapter to show the factors which influence instructional cost per pupil in the schools included in this study. These factors will be named in the order of their influence in determining the per pupil cost of instruction.

It is the opinion of most authorities that class size is the chief factor in determining per pupil cost of instruction. W. G. Reeder states: "Many studies have shown that the size of the class is by far the largest factor in determining per pupil cost."¹

Reeder again emphasizes the class size as the chief determinant of per pupil cost in his statement:

It has long been common knowledge that the size of the class has been the chief determinant of the per pupil cost of instruction and the salary of the teacher is the largest single item in school expense. It is apparent, therefore, that if one teacher can be dispensed with, his salary amounting to several hundred dollars will be saved. Moreover, if the size of the class can be increased, the per pupil cost of the instruction will be commensurately decreased.²

Moehlman says:

Recent studies at Ohio University and the Uni-


versity of Illinois seem to indicate that size of class is not the determining factor in teaching efficiency. Many have seen in these data an argument for larger classes and increase in teacher load. How far that tendency will be carried is hard to state, but any increase in class size will probably result in decreased cost. 3

Pittenger is another authority who ranks class size as one of the fundamental causes for high per pupil cost. 4

Class Size

A study of Tables 1 to 9 inclusive, will show the relation between the cost of a small class and the cost of a class of average or greater size.

Table 1 shows no classes in school A which might be taken as small in size. Table 2 shows two history classes in school A that may be considered small. One in the eighth grade with 19 pupils which has a per pupil cost of $13.69, and one in low tenth grade with 17 pupils that has a per pupil cost of $17.10. The average cost of eighth-grade history in school A, according to Table 10, was $11.07. The average cost per pupil for instruction in tenth-grade history was $11.35. The cost per pupil of a class of 37 students in eighth-grade history was $8.64. The average cost of instruction per pupil in a class of 39 students in tenth-grade history in school A was $10.09. These costs compared with the

3A. B. Moehlman, Public School Finances, p. 98.
4B. F. Pittenger, An Introduction to Public School Finance, p. 118.
high cost of $17.10 in the small class of 17 students show
the affect of class size upon per pupil cost of instruction.

Table 10 shows that the average cost per pupil of
eighth-grade general mathematics in school A is $14.38. In
Table 3 it was seen that a class of 25 pupils in general
mathematics cost $10.60 per pupil. The same table shows a
class of 17 pupils with a cost of instruction per pupil of
$18.16. In this case a reduction in class size of 28 per
cent makes an increase in the cost of instruction per pupil
of 40 per cent.

Table 4 shows one section in bookkeeping in the high
eleventh grade with a membership of 28 pupils costing $9.08
per pupil, while one class in eleventh-grade bookkeeping of
12 members cost $30.84 per pupil.

Table 5 shows a section of eighth-grade Latin with 30
members that has a per pupil cost of $10.36, while a class
of ninth-grade Latin with a membership of 11 students has
a per pupil cost of instruction of $37.98.

Table 3 shows, in school D, the largest class in any
school included in this study. A class in commercial arith-
metic with a membership of 44 students with a per pupil cost
of instruction of $5.73. Table 3 shows, in school C, the
smallest class offered in any school in this study to be a
class in solid geometry with a membership of 4 students and
a per pupil cost of instruction of $68.17.

These classes with their size and per pupil cost of in-
struction substantiates the fact that class size is a fundamental factor in determining per pupil cost of instruction.

Teacher's Salary

The salary paid the teacher is probably the next ranking factor influencing instructional cost per pupil in the schools included in this study. In schools where there is a large degree of uniformity in the salaries of the teachers there is a like uniformity in instructional cost per pupil. School A has the most uniform and consistent salary schedule of any school included in this study. Fourteen, or 40 per cent, of the teaching force in school A receive the same salary, $1440 per year; six, or 17 per cent, each receives $1530 per year; while thirteen, or 37 per cent, each receives $1233 per year. Since this condition is accompanied with a fairly equal subject-pupil load, there is no extreme high or low per pupil cost of instruction in school A.

In contrast with the uniform salary schedule in school A, is the salary schedule in school C. School C shows how the lack of uniformity in salary affects the per pupil cost of instruction within a school. In school C the salary of the teachers ranges from $990 to $1830 with nine, or 39 per cent, of the teachers receiving a salary less than $1300, and an average salary for these teachers of $1105. Twelve, or 53 per cent, of the teachers in school C have salaries above $1350 with the average $1683. This salary schedule,
accompanied with a lack of uniformity in class size, explains the wide range in per pupil cost of instruction in school C. This cost of instruction per pupil in school C ranges from $6.58 in a section of eighth-grade Spanish with a membership of 31 pupils, taught by a teacher with a salary of $990, to a per pupil cost of $68.17 in a class in solid geometry with 4 pupils, taught by a teacher whose salary is $1830.

Teacher-Subject-Pupil Load

The fact that the total teacher-subject-pupil load within a school is approximately equal is an important factor in preventing any extreme high or low instructional cost per pupil. A study of the facts shown in Tables 11 to 15, inclusive, reveals that there is a wide range within each school in the total teacher-subject-pupil load. This factor of teacher-subject-pupil load becomes more pronounced in its influence on per pupil cost of instruction when there is no consistency or uniformity in the salary of the teacher as was pointed out above. Where the salaries are approximately equal but the teacher-pupil load unequal a wide range in instructional cost per pupil is the result. A study of Table 11 shows that in school A the teacher-subject-pupil load is fairly uniform with 23, or 63 per cent, of the total number of teachers, having a class load of 5 and a pupil load ranging from 107 to 143 students. Table 13 shows that school C has a teacher-subject load ranging from two classes with a total membership
of 56 students to 6 classes with a total pupil load of 169 students. In school C five, or 22 per cent, of the high school teachers have a teacher-class load of six; nine, or 39 per cent, have 4 classes; and two, or 9 per cent, have 3 classes.

Course of Study

It is evident in a study of Tables 9 and 10 that too many subjects are being offered in some of the schools when the cost per pupil in these subjects is taken into consideration. Table 9 shows the instruction cost per pupil of the subjects offered, in the schools included in this study, which are not fundamental and are included in the course of study in an effort to broaden the curriculum or to enlarge the number of affiliated credits offered. For illustrations of this factor in increasing cost of instruction per pupil, Table 9 shows school B to have a class in public speaking of 18 members costing $17.30 per pupil for instruction. School C offers a class of speech with a membership of 17 students at a per pupil cost of instruction of $15.53. School C offers a class in botany of 13 members at a cost of instruction per pupil of $25.34. School E offers a class of advanced algebra with 19 members at a cost of instruction per pupil of $14.31.

Training and Tenure of Teachers

The training and tenure of teachers is a contributing factor in the per pupil cost of instruction with a school.
This factor is present in school A but not so pronounced in schools B, C, D, and E. School A has a salary schedule which takes into consideration the training and tenure of the teacher. Less cognizance is taken of training and tenure in schools B, C, D, and E, and for this reason training and tenure is not ranked as a major factor in the per pupil cost of instruction in the schools included in this study.

Summary

The purpose in this chapter has been to show the factors in the schools in this study which have affected or influenced the per pupil cost of instruction. The chief factor, as revealed in this study, is the size of classes. The factors following this in order of their influence are: teacher's salary, teacher-subject-pupil load, course of study, and finally, training and tenure of teachers. Other factors were present in these schools but affected the per pupil cost only slightly, if at all.
CHAPTER V
THE TEACHER-SUBJECT-PUPIL LOAD IN THE
SCHOOLS INCLUDED IN THIS STUDY

It is the purpose of this chapter to show the teacher-subject-pupil load in the schools included in this study and to compare the teacher-subject-pupil ratio with that recommended by the Southern Association of Colleges and Secondary Schools, The North Central Association, and the State Department of Education of Texas.

Tables 11 to 15 inclusive, show the teacher, the subject, and the size of each class, together with the number of classes and the total number of students taught by each teacher, in each of the schools included in this study. The symbols used to designate each subject were taken from the Bulletin of the State Department of Education.¹

In Article IV of the Constitution and Standards of the Southern Association of Colleges and Secondary Schools, a standard for the size of classes is recommended. "The Association recognizes 30 as a maximum. The size of classes shall not be such as to impair efficiency of instruction. Thirty is recommended as a maximum. As many as forty in any

class may subject the school to investigation." ... ... "the maximum teaching load of any teacher of academic subjects is 750 pupil periods per week with not more than six daily recitations."² Where the teacher taught six classes each day the above recommendation as to teacher load would mean a pupil load of 125. In the schools used in this study, in which the average teacher-subject load was found to be five subjects, the 750 pupil periods would mean 150 pupils to each teacher.

The Commission on Secondary Schools in the North Central Association Quarterly makes the following recommendation as to teacher-subject-pupil load:

Some factors conditioning the efficiency of instruction are: (a) pupil-teacher ratio as shown by average daily attendance; (b) the number of classes taught by the teacher; and (c) the number of student hours taught by the teacher. The Association recommends the following as norms: (1) the pupil-teacher ratio, 25 to 1; (2) the number of classes taught by the teacher, five daily; and (3) the total number of pupil periods per day, 150 per teacher.³

The teacher-pupil ratio on the basis of average daily attendance, in Texas, in groups III and IV, in which the schools included in this study would fall, would be 26 and 25 pupils to each teacher.⁴


On this basis a teacher teaching five classes each day would have a total pupil load of 125 to 130 pupils.

A composite range which would embrace the recommendations of the three standards given would give a basic range in teacher-pupil ratio of five classes per day with a total teacher load of 130 to 150 pupils. This would give a corresponding class size range of from 25 to 30 pupils.

School A

Table 11 shows that there are 18 out of the 35 teachers in school A that have a teacher-pupil ratio much below the maximum recommended by the standards referred to above. Out of this number, 7 teachers each has a total pupil load of 100 or less. The table shows that, in this group having small teacher-pupil loads, teacher 4 has only 4 classes with the range in size from 30 to 26 students, making the total pupil load of 91 pupils. Teacher 23 has only 4 classes with a total pupil load of 90. Teacher 24 has a total pupil load of 98. Teacher 26 has four classes with the size ranging from 17 to 27 students and a total pupil load of 93. Teacher 32, while serving one period per day as dean of girls, has only four classes ranging in size from 11 to 30 students and a total pupil load of 76. These ratios are obviously out of line with the recommendations of the Associations referred to above and, in all probability, are incidents where an adjustment is in order which would make a more economical organi-
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<td>Size 3</td>
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**Total Classes:**

- Class 1: 1
- Class 2: 1
- Class 3: 1

**Total Pupils:**

- Class 1: 2
- Class 2: 3
- Class 3: 4
zation without lessening the efficiency of the school.

Table 11 shows that teacher 9 has a teaching load of 159 pupils which is above the recommended ratios.

Teachers 34 and 35 have a pupil load of 250 and 300 pupils, respectively. The classes taught by these teachers are in physical education and are playground and gymnasium activities which can be conducted in larger groups than can academic classes.

School B

Table 12 shows the teacher-subject-pupil load in school B. The usual teacher class load in school B was 5 classes per day. The table shows that out of 33 teachers, 27 have five classes daily, four have four classes and one, the agriculture teacher, has two classes. The table shows that nine teachers have a pupil load in excess of that recommended by the Southern Association, the North Central Association, and the State Department of Education. One teacher, 33, has a pupil load of less than 100. The nine teachers with excessive pupil loads include five teachers with above 160 pupils.

School C

Table 13 shows the teacher-subject-pupil load of school C. It shows that out of the 22 full time teachers in school C, teacher 1 is the only teacher who has a pupil load in excess of the recommended standards. Five teachers have a
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<td>09</td>
<td>Science</td>
<td>Chemistry</td>
<td>Experiment</td>
</tr>
<tr>
<td>01/03</td>
<td>10</td>
<td>English</td>
<td>Literature</td>
<td>Essay</td>
</tr>
<tr>
<td>01/04</td>
<td>11</td>
<td>Social</td>
<td>History</td>
<td>Discussion</td>
</tr>
</tbody>
</table>

* TABLE 1: Teacher Attendance Log for Week 1
<table>
<thead>
<tr>
<th>TEACHER</th>
<th>SUBJECT</th>
<th>SIZE</th>
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<th>SIZE</th>
<th>SUBJECT</th>
<th>SIZE</th>
<th>SUBJECT</th>
<th>SIZE</th>
<th>TOTAL CLASSES</th>
<th>TOTAL PUPILS</th>
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</tbody>
</table>

* Civics is a 6th grade subject
teacher-pupil load of less than 100 pupils. Table 13 shows teachers 8 and 13 with 94 and 65 pupils, respectively, making their teacher-pupil load low, but these two teachers are vice-principals. Teacher 8 is assistant coach while teacher 13 is business manager of athletics. Teacher 22 is the vocational agriculture teacher who does project work in the afternoons. Teacher 24 with 49 pupils is the football coach in school C and consequently has a small teacher-pupil load.

There are a large number of small classes in school C which could be eliminated by a distribution of those students over the other classes. This could be done without lessening the efficiency of the teaching and would result in a saving to the school and a lowering of per pupil cost in the various subjects.

School D

Table 14 shows the teacher-subject-pupil load in school D. It shows that out of the 31 full time high school teachers in school D only one, teacher 13, has a teacher-pupil load in excess of 150 students. This teacher has two classes far above the maximum that is recommended by the Southern Association and the North Central Associations, these are two classes in commercial arithmetic with 44 and 43 pupils, respectively. The table shows teacher 6 to have only two classes with a total pupil load of 67 students but this teacher
<table>
<thead>
<tr>
<th>Class</th>
<th>Subject</th>
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<th>Class</th>
<th>Subject</th>
<th>Size</th>
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<th>Subject</th>
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<th>Class</th>
<th>Subject</th>
<th>Size</th>
<th>Total Classes</th>
<th>Total Pupils</th>
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</tbody>
</table>

* Part-time Junior College teachers
is the football coach of school D and has no afternoon classes. Teachers 8, 11, 18, 19, 23, and 24 are part time Junior College teachers. Teacher 18 is the high school principal.

School E

Table 15 shows the teacher-subject-pupil load in school E. The table shows that out of the 18 teachers only one, 17 with 159 pupils, has a pupil load in excess of the maximum recommended by the Southern Association, the North Central Association, and the State Department. The table shows that 13 of the full time teachers have the same subject load of five classes, two have four classes, and one has two. The principal of the high school, teacher 14, has only two classes with a total pupil load of 50. Teacher 13 is a part time teacher of music with a total pupil load of 40. Teacher 18 is the agriculture teacher who has project work in the afternoons.

Summary

The purpose in this chapter was to show the teacher-subject-pupil load in each of the schools included in this study. This was done by the use of tables 11 through 15. The name of each subject taught, the size of the class, and sections of classes, the total number of classes, section of classes, and the total pupil teaching load of each individual
<table>
<thead>
<tr>
<th>Teacher</th>
<th>Subject</th>
<th>Size</th>
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<th>Subject</th>
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<th>Subject</th>
<th>Size</th>
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<th>Total Pupils</th>
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</tbody>
</table>

* Part Time Teacher
teacher was given. The teacher-subject-pupil ratio of the schools was compared with the standards as set up in the recommendations of the Southern Association of Colleges and Secondary Schools, the North Central Association of Secondary Schools, and the State Department of Education of Texas.

Notice was called to those classes and pupil loads where the total was in excess of the maximum recommended by these Associations.

Recommendations and conclusions which were prompted by the study of this chapter will be deferred to the final chapter of this study.
CHAPTER VI

THE COMPARISON OF THE INSTRUCTIONAL COST PER PUPIL IN THE SCHOOLS INCLUDED IN THIS STUDY WITH THE STANDARD OF THE STATE

It is the purpose of this chapter to make a comparison of the instructional cost per pupil in the five schools included in this study with the standard cost of instruction for schools of like size over the State. Due to the fact that established standard for this cost comparison could not be found for this study, a standard was determined from the charts and tables in the Biennial Report of the State Board of Education, 1934-1936. In regards to the expense of the various items of school accounting, this Bulletin gives the following:

In accordance with the procedure of the Division of Research and Account of the State Department of Education, data referring to the public school situation are reported separately for independent school districts and for common school districts. Furthermore, in the case of the former, such data, where possible, are reported by groups on the basis of general population as revealed by the 1930 Federal Census. These groups with their respective population limits are listed below:

<table>
<thead>
<tr>
<th>Group</th>
<th>Population Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>100,000 and over</td>
</tr>
<tr>
<td>Group II</td>
<td>25,000 to 100,000</td>
</tr>
<tr>
<td>Group III</td>
<td>10,000 to 25,000</td>
</tr>
<tr>
<td>Group IV</td>
<td>5,000 to 10,000</td>
</tr>
<tr>
<td>Group V</td>
<td>2,500 to 5,000</td>
</tr>
<tr>
<td>Group VI</td>
<td>Under 2,500</td>
</tr>
</tbody>
</table>
Tabular data included in this Appendix are reported for the independent school districts as indicated. In addition, summary tables supply data for all independent districts (Groups I-VI, inclusive), for common school districts, and for the entire state (independent districts and common school districts).1

According to the Texas Almanac for the year 1936, the population of the city where school A is located is 15,713; the city where school B is located is 13,850; the city where school C is located is 7,307; the city where school D is located is 8,915; and finally, the city where school E is located has a population of 5,655. According to the groupings given above by the State Board of Education, the above general population census would place schools A and B in Group III, while schools C, D, and E would be placed in Group IV.

Since this study is based on the average daily attendance a grouping on that basis might be in order. According to The State Department of Education, school A and school B are placed in Group III, while schools C, D, and E are placed in Group IV.2 For purposes of comparison, a standard for instructional cost per pupil based on average daily attendance can be determined from the statistics given in the bulletin in regards the cost of instruction in the schools which belong in these groups.

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2Ibid., p. 178.
The instructional salary cost per pupil in average daily attendance in schools in Group III in 1934–1935 was $48.00; and in Group IV the instructional cost per pupil in average daily attendance was $49.00.\(^3\) According to this cost, a school where the normal pupil load is four subjects, as it is in the schools in the group used in this study, would have a per pupil cost in each subject of $12.00 in schools A and B, and $12.25 in schools C, D, and E. In this study the instructional cost per pupil would be increased slightly due to the fact that a supply cost is included in the cost discussed. This increase, however, is not sufficiently large to materially affect the cost per pupil allowance on the basis as determined above.

According to the State Department of Education, schools in Group III spent, in 1935–1936, 81.1 per cent of their total expenditures on instruction.\(^4\) On the basis of $67.50 per student, which the State allows, this would represent a per pupil cost of instruction of $54.00. This figure would make a per pupil cost of instruction in each subject, where the normal pupil load is four courses, of $13.50. It is also found that the schools in Group IV spent, in 1935–1936, 75 per cent of their total expenditures for instructional service.\(^5\) On the basis of $67.50 per student this would make a per pupil cost of instruction in these schools of

\(^3\)Ibid.  \(^4\)Ibid., p. 173.  \(^5\)Ibid., p. 172.
$50.00. This would make a cost of instruction per pupil for each subject of $12.50.

In order to make due allowance for conditions in the various schools, and for purposes of comparison in this study, a range of per pupil cost of instruction for each subject from $10.00 to $15.00 should be satisfactory.

This range will be used as a criterion in the following comparison of the per pupil instructional cost in each subject offered in each school included in this study and the standard per pupil instructional cost for each subject in schools of like size over the State of Texas.

The average instructional cost per pupil in all sections of each subject in each of the schools included in this study is shown in Table 10. This average instructional cost will be referred to throughout the discussion of this comparison as the instructional cost per pupil in each subject in each school.

Table 10 shows that the instructional cost per pupil in eighth-grade English in school A is $11.01, in school B $11.54, and in school D, $10.61. These per pupil costs came within the range of the standard used in this study. School C with a per pupil cost of $8.07 and school E with a per pupil cost of $8.11 fall below the minimum in schools of like size over the State.

In ninth-grade English, school A with a per pupil cost of instruction of $11.21, and school C with a per pupil cost
of $10.81 are within the standard for such cost. School B with a per pupil cost of $9.73, school D with $9.81, and school E with $9.23 are below the standard.

In tenth-grade English, school A with a per pupil cost of $11.30, and school C with a per pupil cost of $11.53 are within the standard for such cost. School B with a per pupil cost of $9.19, school D with a cost per pupil of $9.91, and school E with a per pupil cost of $8.54 are below the minimum of the standard cost for such schools.

In eleventh-grade English, school C with a per pupil cost of instruction of $11.69, school A with a per pupil cost of instruction of $10.58 are within the standard for such cost. School B with a per pupil cost of $7.83 and school D with a per pupil cost of instruction of $9.11 are below the standard.

In eighth-grade history, school A with a per pupil cost of instruction of $11.07, is within the standard for such cost. School C with a per pupil cost of instruction of $8.44 and school D with a per pupil cost of instruction of $9.09 are below the standard. School B and school E offer no eighth-grade history.

In ninth-grade history, school E with a per pupil cost of instruction of $10.63 and school C with a per pupil cost of instruction of $10.30 are within the standard cost. School D with a per pupil cost of instruction of $9.46,
school A with a per pupil cost of $9.03, and school B with a per pupil cost of instruction of $7.74 are below the standard.

In tenth-grade history, school A with a per pupil cost of instruction of $11.35 and school B with a per pupil cost of instruction of $10.48 are within the standard for such cost. School E with a per pupil cost of instruction of $9.31, and school D with a per pupil cost of instruction of $8.77 are below the standard. School C offers no tenth-grade history.

In eleventh-grade history, school B with a per pupil cost of instruction of $10.66, and school C with a per pupil cost of instruction of $10.37 are within the standard for such cost. Schools A, D, and E offer no eleventh-grade history.

In eighth-grade algebra, school C with a per pupil cost of instruction of $13.17, and school A with a per pupil cost of instruction of $10.19 are within the standard for such cost. School D with a per pupil cost of instruction of $8.95, school B with a per pupil cost of instruction of $8.12, and school E with a per pupil cost of instruction of $7.45 are below the standard.

In ninth-grade algebra, school A with a per pupil cost of instruction of $12.23, and school B with a per pupil cost of instruction of $10.59, are within the standard for such cost. School E with a per pupil cost of $9.98 and school D with a per pupil cost of $9.39 are below the standard. School C offers no ninth-grade algebra.
In tenth-grade plane geometry, school C with a per pupil cost of instruction of $13.88, school A with a per pupil cost of instruction of $11.58, school D with a per pupil cost of instruction of $10.22, school E with a per pupil cost of instruction of $10.20, and school B with a per pupil cost of instruction of $10.08 are each within the standard for such cost.

In eleventh-grade trigonometry, school A with a per pupil cost of instruction of $11.68 is within the standard for such cost. School C with a per pupil cost of instruction of $18.13 is above the standard for such cost. School B with a per pupil cost of instruction of $9.78 is below the standard. School D and school E offer no trigonometry.

In eleventh-grade advanced algebra, school E with a per pupil cost of instruction of $14.31, and school D with a per pupil cost of instruction of $12.36 are within the standard for such cost. Schools A, B, and C offer no advanced algebra.

In eighth-grade general mathematics, school A with an average per pupil cost of instruction of $14.38 is within the standard for such cost. School C with an average per pupil cost of instruction of $9.71, and school B with a per pupil cost of instruction of $7.89 are below the standard. School D and school E offer no general mathematics.

In ninth-grade commercial arithmetic, school C with an average per pupil cost of instruction of $14.35, and school A with a per pupil cost of instruction of $13.74 are within the
standard for such cost. School D with a per pupil cost of instruction of $5.82, and school E with a per pupil cost of instruction of $6.45 are below the standard. School B offers no commercial arithmetic.

In ninth-grade business arithmetic, school C with a per pupil cost of instruction of $9.50 is below the standard. Schools A, B, D, and E offer no business arithmetic.

In eighth-grade Latin, school E with a per pupil cost of instruction of $14.60, school C with a per pupil cost of instruction of $12.72, school D with a per pupil cost of instruction of $12.59, and school A with a per pupil cost of instruction of $10.36 are each within the standard for such cost. School B with a per pupil cost of instruction of $16.62 is above the standard.

In ninth-grade Latin, school A with a per pupil cost of instruction of $32.57, and school C with a per pupil cost of instruction of $30.89 are above the standard for such cost. School E with a per pupil cost of instruction of $14.80 is within the standard for such cost. School B with a per pupil cost of instruction of $8.30, and school D with a per pupil cost of instruction of $8.04 are below the standard for such cost.

In tenth-grade Latin, school A with a per pupil cost of instruction of $18.18 is above the standard cost for this subject. Schools B, C, D, and E offer no tenth-grade Latin.

In eleventh-grade Latin, school D with a per pupil cost
of instruction of $17.70 is above the standard for such cost. School C with a per pupil cost of instruction of $12.60 is within the standard cost for this subject. Schools A, B, and E offer no eleventh-grade Latin.

In eighth-grade Spanish, school E with a per pupil cost of instruction of $13.63, and school A with a per pupil cost of instruction of $10.11 are within the standard for such cost. School C with a per pupil cost of instruction of $9.35 is below the standard. Schools B and D offer no eighth-grade Spanish.

In ninth-grade Spanish, school A with $13.80, school E with a per pupil cost of instruction of $12.50, school C with a per pupil cost of instruction of $12.04, school D with a per pupil cost of instruction of $11.56, and school B with a per pupil cost of instruction of $10.93 are each within the standard for such cost in this subject.

In tenth-grade Spanish, school C with a per pupil cost of instruction of $18.97, school E with a per pupil cost of instruction of $15.55, and school A with a per pupil cost of instruction of $15.46 are each above the standard cost for this subject. School D with a per pupil cost of instruction of $11.16, and school B with a per pupil cost of instruction of $10.33 are within the standard cost.

In ninth-grade French, school D with a per pupil cost of instruction of $33.32 is above the standard cost. School C with a per pupil cost of instruction of $13.67 is within
the standard cost. Schools A, B, and E offer no ninth-grade French.

In tenth-grade French, school D with a per pupil cost of instruction of $41.63 is above the standard cost for a subject. Schools A, B, C, and E offer no tenth-grade French.

In eighth-grade home economics, school B with a per pupil cost of instruction of $18.34, and school E with a per pupil cost of instruction of $15.46 are above the standard cost. School C with a per pupil cost of instruction of $14.31 and school A with a per pupil cost of instruction of $11.45 are within the standard for such cost. School D with a per pupil cost of instruction of $9.75 is below the standard cost.

In ninth-grade home economics, school A with a per pupil cost of instruction of $16.37 is above the standard cost for a subject. School E with a per pupil cost of instruction of $14.31, school B with a per pupil cost of instruction of $13.47, school D with a per pupil cost of instruction of $10.79, and school C with a per pupil cost of instruction of $10.59 are within the standard cost for a subject.

In tenth-grade home economics, school E with a per pupil cost of instruction of $34.74, and school C with a per pupil cost of instruction of $15.66 are each above the standard cost for a subject. School B with a per pupil cost of instruction of $13.52, and school A with a per pupil cost of instruction of $13.90 are within the standard cost. School D offers no tenth-grade home economics.
In eleventh-grade speech, school C with a per pupil cost of instruction of $15.52 is above the standard cost for a subject. Schools A, B, D, and E offer no eleventh-grade speech.

In eighth-grade community civics, school B with a per pupil cost of instruction of $9.13 is below the standard. No other schools offer community civics.

In eleventh-grade journalism, school C with a per pupil cost of instruction of $13.33 is within the standard cost. Schools A, B, D, and E offer no classes in journalism.

In vocational agriculture, school A with a per pupil cost of instruction of $38.44, school B with a per pupil cost of instruction of $59.06, school C with a per pupil cost of instruction of $54.03, and school E with a per pupil cost of instruction of $38.88 are all above the standard cost. School D offers no vocational agriculture.

In ninth-grade typing, school E with a per pupil cost of instruction of $14.45, and school C with a per pupil cost of instruction of $11.01 are within the standard for such cost. Schools A, B, and D offer no ninth-grade typing.

In tenth-grade typing, school C with a per pupil cost of instruction of $13.00, and school E with a per pupil cost of instruction of $12.26 are within the standard for such cost. School A with a per pupil cost of instruction of $9.31, school D with a per pupil cost of instruction of $8.54, and school B with a per pupil cost of instruction of $4.60 are
below the standard.

In eleventh-grade typing, school E with a per pupil cost of instruction of $11.33 is within the standard for such cost. Schools A, B, C, and D offer no eleventh-grade typing.

In eleventh-grade stenography, school A with a per pupil cost of instruction of $14.13 is within the standard for such cost. School D with a per pupil cost of instruction of $9.38, school C with a per pupil cost of $8.44, and school B with a per pupil cost of instruction of $8.41 are below the standard for such cost.

In eighth-grade junior business training, school A with a per pupil cost of instruction of $11.72, and school B with a per pupil cost of instruction of $11.33 are within the standard for such cost. School C with a per pupil cost of $8.74 is below the standard. Schools D and E offer no eighth-grade junior business training.

In ninth-grade commercial law, school C with a per pupil cost of instruction of $12.44 is within the standard cost. School A with a per pupil cost of instruction of $8.47 is below the standard. Schools B, D, and E offer no ninth-grade commercial law.

In eighth-grade general science, school A with a per pupil cost of instruction of $11.55, school B with a per pupil cost of instruction of $11.05, and school D with a per pupil cost of instruction of $10.59 are within the standard subject cost. School E with a per pupil cost of instruction of $8.28
and school C with a per pupil cost of instruction of $8.82 are below the standard cost.

In ninth-grade biology, school B with a per pupil cost of instruction of $16.18 is above the standard subject cost. School A with a per pupil cost of instruction of $14.38, school C with a per pupil cost of $13.52, school E with a per pupil cost of $11.81, and school D with a per pupil cost of instruction of $11.35 are within the standard subject cost.

In eleventh-grade physics, school A with a per pupil cost of instruction of $18.31, school D with a per pupil cost of $16.36, school C with a per pupil cost of instruction of $16.13, and school D with a per pupil cost of $15.46 are above the standard subject cost. School B with a per pupil cost of instruction of $13.24 is within the standard cost.

In tenth-grade chemistry, school B with a per pupil cost of instruction of $31.17 is above the standard subject cost. School A with a per pupil cost of instruction of $13.82, school E with a per pupil cost of $13.28, school D with a per pupil cost of $11.70, and school C with a per pupil cost of $11.45 are within the standard cost.

In eleventh-grade economics, school A with a per pupil cost of instruction of $11.59, school C with a per pupil cost of $10.97, and school E with a per pupil cost of $10.48 are within the standard subject cost. School B with a per pupil cost of $9.53, and school D with a per pupil cost of $9.32 are below the standard cost.
In eleventh-grade civics, school C with a per pupil cost of instruction of $16.69 is above the standard for such cost. School A with a per pupil cost of $12.16 is within the standard for such cost. School E with a per pupil cost of $9.30 is below the standard. Schools B and D offer no eleventh-grade civics.

In eighth-grade shop work, school B with a per pupil cost of instruction of $14.81, and school A with a per pupil cost of $13.39 are within the standard for such cost. Schools C, D, and E offer no eighth-grade shop work.

In ninth-grade shop work, school D with a per pupil cost of $17.36, school A with a per pupil cost of instruction of $16.16, and school B with a per pupil cost of $15.74 are above the standard for such cost. School C with a per pupil cost of $14.50, and school E with a per pupil cost of instruction of $14.37 are within the standard for such cost.

In eighth-grade manual training, school D with a per pupil cost of instruction of $17.48, and school C with a per pupil cost of $16.74, are above the standard subject cost. School A with a per pupil cost of instruction of $13.49, and school B with a per pupil cost of $12.91, are within the standard cost. School E offers no eighth-grade manual training.

In ninth-grade manual training, school A with a per pupil cost of instruction of $11.97 is within the standard cost. Schools B, C, D, and E offer no ninth-grade manual training.
In tenth-grade manual training, school E with a per pupil cost of instruction of $14.41, and school A with a per pupil cost of $12.91, are within the standard cost. Schools B, C, and D offer no tenth-grade manual training.

In tenth-grade public speaking, school B with a per pupil cost of $17.80 is above the standard cost. School C with a per pupil cost of instruction of $10.23 is within the standard cost. School A with a per pupil cost of $9.94 is below the standard. Schools D and E offer no tenth-grade public speaking.

In eleventh-grade botany, school C with a per pupil cost of instruction of $35.34 is above the standard for such cost. Schools A, B, D, and E offer no eleventh-grade botany.

In physical education for boys, school B with a per pupil cost of instruction of $9.07, and school A with a per pupil cost of $3.38 are below the standard for such cost. Schools C, D, and E offer no physical education for boys.

In physical education for girls, school B with a per pupil cost of instruction of $9.24, and school A with a per pupil cost of $3.18 are below the standard subject cost. Schools C, D, and E offer no physical education for girls.

In band, school E with a per pupil cost of instruction of $23.69, and school C with a per pupil cost of $23.41 are above the standard cost. School A with a per pupil cost of instruction of $14.30 is within the standard. School B with a per pupil cost of instruction of $9.44 is below the stand-
ard and school D offers no course in band.

In debate, school B with a per pupil cost of instruction of $9.34 is below the standard. Schools A, C, D, and E offer no course in debate.

In eleventh-grade advertising, school B with a per pupil cost of instruction of $8.41 is below the standard cost. Schools A, C, D, and E offer no eleventh-grade advertising.

In ninth-grade commercial geography, school B with a per pupil cost of instruction of $10.80 is within the standard cost. Schools A, C, D and E offer no ninth-grade commercial geography.

In tenth-grade bookkeeping, school A with a per pupil cost of $20.84 is above the standard cost. School C with a per pupil cost of $13.00, and school B with a per pupil cost of instruction of $11.86, are within the standard cost. Schools D and E offer no tenth-grade bookkeeping.

In eleventh-grade bookkeeping, school D with a per pupil cost of instruction of $13.95 is within the standard cost, school A with a per pupil cost of $9.74 is below the standard, and schools B, C, and E offer no eleventh-grade bookkeeping.

In eleventh-grade public speaking, school A with a per pupil cost of instruction of $10.68 is within the standard cost, and schools B, C, D, and E offer no eleventh-grade public speaking.
Summary

The aim of this chapter was to set up a criterion for measuring per pupil instructional cost, and to use this standard in comparing the average instructional per pupil cost in each of the schools included in this study with the cost of instruction per pupil recommended by the State Department of Education of Texas. This has been done in the discussion in this chapter. In cases, where the average instructional cost per pupil was above the range of $10.00 to $15.00 specific attention has been called to that particular average cost of instruction per pupil. In cases, where the average instructional cost per pupil was below the range of $10.00 to $15.00 attention has been called to that particular cost of instruction per pupil.

The comparison made in this chapter reveals that only in few instances is the average per pupil instructional cost excessively high in the sections of the required subjects. In English, in all sections in each grade in each school, the highest average instructional per pupil cost was $11.69 which is within the standard subject cost used in this study. In history, the highest average per pupil instructional cost was $11.07 which is within the standard subject cost per pupil used in this study. In mathematics, the average per pupil instruction cost, while approaching the maximum, exceeds it only in one instance, namely, the single section in solid geometry in school C with a per pupil cost
of $88.17.

In Latin, the average instructional cost per pupil exceeds the standard subject per pupil cost in each grade, with the exception of the eighth grade. The extreme high average per pupil cost in Latin is in the ninth grade in school A with a per pupil cost of $32.57. In Spanish, in the eighth grade the average instructional cost per pupil was normal, but in the ninth and tenth grades, the average per pupil cost exceeded the standard subject cost per pupil.

In all the vocational subjects, the average instructional per pupil cost were excessive, due, in most cases, to small classes or sections and the subsidized salary of the teacher.

In the commercial subjects, in all grades in each school, the average instructional cost per pupil were, with a few exceptions, within the standard subject per pupil cost used in this study.

In the science sections, in all grades except the eighth grade, the average instructional per pupil cost was high with the extreme instance being a section of botany in school C with a per pupil cost of instruction of $35.34.

In manual training in each grade in each school, the average instructional cost per pupil was within the standard subject per pupil cost, with a few exceptions in shop work in the ninth grade.

In the schools where single classes or sections were
offered in subjects, classified as other subjects for purposes in this study, the average instructional cost per pupil are unusually high, due in most instances, to the fact that classes are small.

In all the sections of all subjects offered in the five schools included in this study, there are 72 sections above and 231 sections below the standard cost of instruction per pupil. In school A there are 14 sections above and 28 sections below the standard cost of instruction per pupil used in this study. In school B there are 14 sections above and 69 sections below the standard instructional cost per pupil. In school C there are 34 sections above and 42 sections below the standard instructional cost per pupil used in this study. In school D there are 10 sections above and 55 sections below the standard cost of instruction per pupil. In school E there are 10 sections above and 37 sections below the standard instructional cost per pupil used in this study.
CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

It is the purpose of this chapter to give the more important conclusions and recommendations arrived at from this study.

The absence of a systematized, definite, and planned method of compiling and filing school statistics in regards to pupils, subjects, size of classes, supplies, teachers qualification, teacher-subject-pupil loads, training and tenure of teachers, and other public school cost data was very noticeable in the schools included in this study. The information in regard to these items was available, in most cases, but it was not kept in an organized systematic order. The school executives in each of the schools included in this study should make it a prime duty and responsibility to establish and utilize an adequate school and pupil accounting system in the administration of their school. This cannot be over emphasized. Reeder, in summing up a discussion of the importance of school records, states: "In brief, every school system which would be efficiently administered must systematically collect, organize, file, and use information which will show the efficiency of every employee, every pupil, every material, and every process."1

It is apparent from an examination of tables 1-9 inclusive, that a combining of sections in some subjects could be affected which would eliminate several sections without forcing the membership in the combined sections to go above the average or maximum size. For example, in high eighth-grade history, according to Table 1, school 1 offers ten sections with one section having a membership of 19 students. These sections could be grouped into nine sections with an average membership of 25 students and thus eliminate one section at a considerable saving to the school. Such examples may be found through the tables in each school. School superintendents and principals should investigate the size of class sections with a view to saving the cost of teaching small sections which could be eliminated by redistribution.

The school administrator should avoid, whenever possible, the teaching of low divisions of subjects. In very few exceptions these low grade sections are very expensive due to small class size. Table 3 shows one section of low eighth-grade algebra in school 0 with a membership of 10 students and a per pupil cost of instruction of $19.97. In this case the membership of 10 students is 5 below the standard recommended by the State Department of Education. The per pupil cost of $19.97 is $4.97 above the maximum per pupil cost of instruction used as a standard in this study.

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It is recommended that the schools included in this study observe more conformity in regard to the recommendations, standards, and requirements of the accrediting association. This would serve to eliminate many discrepancies in the size of classes and cost of instructional service in the schools included in this study.

It is recommended that the superintendents and principals study the teacher-assignment load in their school. In regard to this factor, Englehardt states: "The cost of operating a high school is dependent largely upon the teacher-assignment load; therefore it is very important for the principal to organize the school so that the staff are carrying the most economical and effective load."\(^3\)

It is recommended that the administrative officers of the schools included in this study make an unbiased and unprejudiced investigation as to the validity of the course of study offered in their schools. Reeder says: "Several things can be done in the attempt to offer a greatly diversified curriculum and at the same time keep the size of classes at a desirable number. For example subjects may be alternated."\(^4\)

It is evident from the cost of instruction per pupil in the subjects offered in some schools that the course of study is

\(^{3}\)Fred Englehardt, Public School Organization and Administration, p. 293.

\(^{4}\)W. C. Reeder, Business Administration of a School System, p. 373.
too broad and too diversified. This can be a very potent determinant in per pupil cost of instruction.

It is recommended that each of the schools included in this study purchase more instructional supplies per pupil in the various departments. The savings affected in better organization of some departments would enable the school to furnish supplies so necessary to efficient teaching in other departments.

Finally, it is recommended that the administrators in each of the schools included in this study make it their major concern to know more about the cost of instruction per pupil in every department in their school organization. They should determine the cost of the various items in their own school and compare them with like cost in schools of approximate size. When there is a marked difference they should investigate the cause and determine a remedy. Only by so doing will the administrator get a clear idea of the efficiency of his school organization.
BIBLIOGRAPHY


State Department of Education, Standards and Activities of the Department of Supervision, Bulletin No. 347, Austin, Texas, July 1935.

