CLASSROOM SIZE AND ENROLLMENT IN THE HIGH SCHOOLS
OF SELECTED SMALL KANSAS CITIES

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ACKNOWLEDGMENTS

CHAPTER I

INTRODUCTION TO THE PROBLEM

There is hardly a topic in education which has been written about so energetically and voluminously as school buildings.[1] Meticulous prescriptions have been produced on every aspect of the school plant; these have included site, finance, physical structure, toilets, food preparation areas, halls, offices, climate control, lighting, auxiliary spaces, and instructional areas of all kinds. Taxpayers, by means of the ballot box, have more and more frequently complained that schools cost too much. There has seldom been adequate, if any, research conducted on the subject at hand. Johns and Morphet have characterized educational research as "a label which signifies miscellaneous generation of energy in the vicinity of an important problem area."[2]

Statement of the Problem

It was the purpose of this study to determine certain biographical and physical situation data concerning members of the sample, and to draw meaningful relationships from the

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[1] Harold Boles, Step by Step to Better School Facilities (New York: Holt, Rinehart, and Winston, 1965), p. V.

[2] Roe Johns and E. Morphet, The Economics and Finance of Education (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969), p. 116.

data.

Statement of Questions

Question I. What is the relationship between the enrollment of the school in which a respondent teaches and:

(a) the size of his classroom?

(b) the size of his average class?

(c) the classroom size he feels to be optimum?

(d) the average class size he feels to be optimum?

(e) the total school enrollment he feels to be optimum?

Question II. What is the relationship between the primary subject taught by a respondent and:

(a) the size of his classroom?

(b) the size of his average class?

(c) the classroom size he feels to be optimum?

(d) the average class size he feels to be optimum?

Question III. What is the relationship between the size of classroom in which a respondent teaches and:

(a) the size of his average class?

(b) the classroom size he feels to be optimum?

(c) the average class size he feels to be optimum?

Question IV. What is the relationship between the average class size with which a respondent functions and:

(a) the classroom size he feels to be optimum?

(b) the average class size he feels to be optimum?

Question V. What is the relationship between the classroom size a respondent feels to be optimum and the average class size he feels to be optimum?

Question VI. What is the relationship between the overall satisfaction or dissatisfaction of a respondent and:

(a) his sex?

(b) his years of teaching experience?

(c) his total school enrollment?

(d) his educational attainment?

(e) his primary subject taught?

(f) whether or not he has taught at a school other than the one in which he is presently functioning?

Definition of Terms

Class size. The pupil enrollment during one class period in a day.

Classroom size. The floor area, in square feet, of an instructional space.

School size. The total pupil enrollment in the school unit.

Traditional scheduling. The customary six or seven period, 50-55 minute school day.

Non-graded. A continuous learning process of grouping

pupils throughout the school according to ability rather than chronological age and/or grade level.

Modular scheduling. Use of instructional time periods of varying length or at least of different duration than the traditional method.

Flexible modular scheduling. Modular scheduling of instructional periods that may change from day to day or week to week.

Area per pupil. The floor area, in square feet, available for each pupil, obtained by dividing classroom size by class size.

Assumptions

It was assumed for the purposes of this study that respondents would exercise some responsibility in answering questionnaire items concerning school enrollment (A-III) and classroom size (B-I). It was further assumed that all respondents were teaching in schools which employ traditional scheduling. Questionnaire item B-VI was included to test this assumption.

CHAPTER II

REVIEW OF THE LITERATURE

Publications concerned with school plant planning or evaluation have gone through several phases. Checklists, evaluation guides, and general guidelines have all enjoyed their moments of popularity. Each, however, had its good and bad points. Checklists could be extremely valuable for either the inexperienced or the experienced, as they served to remind one of pertinent items. However, Boles has cautioned that "offsetting the reminder advantage of check-lists is the tendency of the inexperienced surveyor to adhere slavishly to the lists."[3] Another disadvantage is the fact that most checklists tended to assign all items equal importance. When first published in 1921, the National Council on Schoolhouse Construction Guide was little more than a checklist of standards and specifications. Over the years the book had executed a philosophical about face. With few exceptions, the latest edition of the Guide was found to deal only in generalities and refused to commit itself to any figure on any topic. A somewhat middle-of-the-road evaluation and planning guide was found in Castaldi's Creative Planning for Educational Facilities,

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[3]Boles, op. cit., pp. 46-47.

in that he presented a range for standards rather than a set figure.

Class Size

"Research, as early as 1926 and as recent as 1965, can be cited concerning the determination of optimum class size."[4]

Background of class size. Generally speaking, studies of class size employed one of four criterion variables in the determination process. They were: (1) Some achievement measure administered to the pupils, (2) Teacher/administrator opinion, (3) Educational process employed, and (4) Direct researcher observation. Of the four categories, the first had an even split. Half of the projects found large groups best, and half favored the small. All the studies involving educators' opinions favored small class size. Those classes evaluated with respect to educational processes revealed that more enrichment materials, small group activities, and closer interpersonal relationships existed in the smaller groups. Observation by researchers seemed to indicate that no cut and dried situation existed. There were advantages and disadvantages in each case depending mainly on the specific activity in which the group was engaged.

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[4]William S. Vincent, "Class Size," Encyclopedia of Educational Research, ed. Robert L. Ebel (4th ed., New York: Macmillan Co., 1964), p. 143.

Efficiency in class considered such variables as subject taught, purpose of instruction, learning activity, type of pupil, and classroom space. Research seemed to indicate that most teachers (98%) favored an optimum per class pupil enrollment of less than 30. A majority (53%) favored a range from 20-24.[5] McLeary based his suggested classroom sizes on the needs of classes of 25 pupils.[6] However, on this point others were not so adament. MacConnell claimed that it was difficult to determine optimum class size. He concluded, though, that certainly most classes needed to be under 30 and probably in the neighborhood of 25.[7]

Present standards. A synthesis of Castaldi and the NCSC Guide placed most class sizes right at 25. A notable exception was typing at 35. A complete tabulation of class size can be found in Appendix A.

Classroom Size

Expression of optimum classroom size was found in two forms. It was listed as either a total square footage for

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[5]NEA Research Division, "What Teachers Think," Research Report--R13, 1968, p. 8.

[6]Ralph D. McLeary, Guide for Evaluating School Buildings, (Cambridge, Massachusetts: New England School Development Council, 1951), p. 46.

[7]James D. MacConnell, Planning for School Buildings, (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1957), p. 231.

the entire instructional space or as area per pupil, also
expressed in square feet.

Background of classroom size. A good deal of vari-
ance was found to exist in the literature concerning how
large a classroom should be. For example, a general purpose
classroom ranged from a minimum of 700[8] to a maximum of 960
square feet.[9] This was primarily due to differing concepts
of optimum class size; however most authors agreed that
there should be a minimum of 30 square feet per pupil in
such classrooms. Other examples of a wide distribution of
suggested standards were noted with regards to Industrial
Arts, varying from a minimum size of 1500 with 50-75 square
feet per pupil[10] to a maximum of 2400 with in excess of
100 square feet per pupil;[11] and Home Economics ranging from
960 at 40 square feet per pupil[12] to 2400 total classroom

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[8]Jack Landes and M. Sumption, Citizens Workbook for
Evaluating School Buildings (Danville, Illinois: The Inter-
state Printers and Publishers, Inc., undated), p. 9.

[9]MacConnell, op. cit., p. 232.

[10]G. W. Reida, A Manual for Evaluating School Facili-
ties (Topeka: Kansas State Board of Public Instruction,
1962), p. 29.

[11]MacConnell, op. cit., p. 233.

[12]C. W. Odell, Standards for the Evaluation of Second-
ary School Buildings (Ann Arbor, Michigan: Edwards Brothers,
Inc., 1950), p. 29.

size with 80 square feet per pupil.[13]

Present standards. As was stated above, Castaldi cited his standards in terms of a maximum to minimum range. For the purposes of this study, in the synthesis of present standards for classroom sizes, only one figure was used. For a complete tabulation of classroom size standards, see Appendix A.

School Size

"At the secondary school level the enrollment should not fall below 500 pupils or about 150 pupils in the freshman class of a four year high school. The upper limit should not exceed 1500 pupils."[14] A study of any 4000 pupil high school would have revealed not only duplication, but also multiplication of similar spaces. Large high schools could be justified only in cities where the population density was very high, such as New York, St. Louis, Los Angeles and Boston.[15]

Educational Research

Due to the fact that this study was concerned with the

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[13]Reida, op. cit., p. 27.

[14]Basil Castaldi, Creative Planning of Educational Facilities (Chicago: Rand McNally, 1969), p. 50.

[15]Ibid.

field of education, it seemed appropriate that a review of
literature on educational research be included.

Inferential statistics. "An important distinction to
be made is that of a population; as opposed to a sample
drawn from that population."[16] Parameters have been used
to describe characteristics of the data for a population,
in the same manner that statistics have been employed to
describe the data for a sample. In many situations a
statistic, such as the sample mean, has been used as an
estimator of a parameter, the population mean. This re-
flected the fact that a parameter was usually considered to
be unknown; more exactly, it was held to be unknowable pre-
cisely. In the face of this uncertainty, the value of the
statistic may be used as a point estimate of the unknown
parameter. Probability theory, which is a branch of mathe-
matics, has shown how the probabilities of events, such as
anticipated observations, could be calculated from known
probabilities of antecedent conditions. Statistical infer-
ence, on the other hand, has attempted to solve the inverse
problem: reasoning from observations back to the causal re-
lations that are presumed to have led to these observations.

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[16]C. W. Harris, "Statistical Method," Encyclopedia of
Educational Research, ed. Robert L. Ebel (4th ed., New York:
Macmillan Co., 1964), p. 1309.

Estimators. Over a period of time certain criteria
for estimators have been developed:

1. Unbiasedness was one criterion. The arithmetic mean
   of a sample was an unbiased estimator of the popu-
   lation parameter. However, the sample variance
   became a biased estimator of the population vari-
   ance, for instance, if it was computed by dividing
   by sample size, rather than by the number of degrees
   of freedom.

2. Consistency referred to the behavior of the esti-
   mator as the sample size increased without limit;
   if under these conditions the estimator became con-
   centrated near the population value, it was said
   to be consistent. A consistent estimator guaranteed
   that if a large enough sample was taken, the point
   estimate was likely to be near the parameter.

3. Efficiency was a third, and often highly regarded,
   criterion. This criterion considered the limiting
   variance of the estimator as the sample size in-
   creased; it stated that, among estimators of a cer-
   tain class, those whose sampling distributions had
   the smallest variance were efficient estimators.
   The arithmetic mean was an efficient estimator of
   the center of a normal distribution, but it was
   less efficient than the median when the population
   was U-shaped.

4. Sufficiency was a fourth criterion. An estimator
   satisfied this criterion when no other statistic,
   that could be calculated from the same sample, pro-
   vided any additional information about the parameter
   which was to be estimated. A sufficient estimator
   was efficient, and an efficient estimator was
   necessarily consistent.[17]

Sampling. The design of a survey sample will be
determined by the objectives of the survey. "Sample design
has two steps: a selection process, in which rules and

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[17]Ibid., pp. 1309-1310.

operations are developed by which certain members of the population are included in the sample; and an estimation process, in which the sample estimates of population values are computed."[18] The basic units in sampling were found to be the elements of the population. A population was defined jointly with its elements. The population was the aggregate of its elements, and the elements were the basic units that made up and defined the population. In multistage cluster sampling a hierarchy of clusters (groups of elements) could be used. A sample of teachers (elements) may be selected from a sample of schools (first clusters), in a sample of school systems (second clusters), in a sample of geographic areas within a state (third clusters). "Sampling may be fortuitous, purposive or random. . . ."[19] Although the most sophisticated explanatory survey research also had used probability sampling, many explanatory surveys had been conducted on purposive samples in which, for example, pupils, teachers or school systems were selected on the assumption that they were typical of some hypothetical universe.

Rating scales. A rating was defined as an instrument for the quantification of observations through the assignment

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[18]Robert E. Herriot, "Sampling," Encyclopedia of Educational Research, ed. Robert L. Ebel (4th ed., New York: Macmillan Co., 1964), p. 1401.

[19]Ibid.

of numerical values to ratings of the separate components
and the summation of these ratings into a composite score.
As in the case of observational studies, it must be recog-
nized that the rater may have brought to the investigation
personal biases that may have distorted his perception and
interpretations. Since the instrument used in this study
was not involved with peer relations, the halo effect--a
general tendency to rate according to overall impressions
rather than on the basis of individual traits--was not
expected to be a factor. The error of central tendency,
which was defined as rating near average when in doubt, was
felt to be a distinct possibility. Another common error
considered was that of generosity or leniency error, in
which the rater rated everything consistently above (or
perhaps below) the average.[20]

This error was felt to be most likely only on the ex-
tremely qualitative question, B-VIII. It was hoped that
B-IX would help remedy this possibility by requiring
substantiation.

Criticisms of conventional procedures. One line of
criticism was that hypothesis testing was a decision process
that can rarely be used intelligently in psychological

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[20]George J. Mouly, "Research Methods," Encyclopedia
of Educational Research, ed. Robert L. Ebel (4th ed., New
York: Macmillan Co., 1964), pp. 1147-1148.

research. This criticism regarded decision theory as an
excellent formulation when an acceptable region could be
specified or when both "accept H_o" and "reject H_o" repre-
sented appropriate actions. A second criticism was that
very sharp null hypotheses were nearly always known, before-
hand, to be false. For example, it could be held quite
reasonable to believe that two different treatments would
be associated with at least some mean difference in an out-
come variable, even though the difference is not large.
Because of the nature of the study in question, these first
two criticisms were not felt applicable. However, another
was felt to be perhaps relevant. The third criticism of
the conventional procedures was that they usually have
ignored prior information. Typical hypothesis-testing had
generally begun with the assumption that nothing was known
about the effects of the treatment under study; in other
words every such study was assumed to be the pioneer
effort.[21] It was hoped this was overcome in the present
investigation by the fact that data gathered was compared
with existing standards.

Pertinent Opinion

The question of class size was not resolved by the
review of previous research. Regardless of extant

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[21]Harris, op. cit., pp. 1313-1314.

literature, educators were expected to retain their prefer-
ence for smaller class size. Over 1500 teachers replied
to a questionnaire in 1965 concerning class size. Better
than a two-thirds majority of the respondents indicated a
preference for classes under 25 (Table I).[22] Even the
research evidence was mixed. One study reported there was
no significant difference found to exist between the
achievement of pupils in above average size classes when
compared to those in average size classes.[23] On an opposite
note, Woodson stated from his study of class size that "it
may be concluded from the evidence in this study that there
is a small inverse relationship between academic achievement
of pupils and class size."[24]

State of the Art

It was believed that the state of the art of research
into the optimum sizes of classes, educational facilities,
or school enrollment was summed up by the following quota-
tion: "The specific sizes and comments presented . . . are
not the product of any research nor are they attributable

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[22]NEA Research Division, op. cit.

[23]George A. Jeffs, The Influence of Class Size on
Academic Attainment and Student Satisfaction (Washington:
U.S. Department of Health, Education and Welfare, 1967), p. 40.

[24]Marshall S. Woodson, "Effect of Class Size as
Measured by an Achievement Criterion," Institute of Admin-
istrative Research Bulletin, VIII (February, 1968), p. 6.

TABLE I

TEACHER PREFERENCE ON CLASS SIZE[*]

Class Size	Men	Women	
Fewer than 20 pupils	28.5%	14.4%	
20-24 pupils	51.1%	53.8%	
25-29 pupils	17.7%	30.1%	
30-34 pupils	2.5%	--	
35 or more pupils	0.2%	1.7%	
	100.0%	100.0%	
N =	487	1055	

[*]NEA Research Division, "What Teachers Think," Research Report--R13, 1968, p. 8.

to any person or group."[25]

[25]Castaldi, op. cit., p. 250.

CHAPTER III

RESEARCH METHOD

At the time this study was conducted there were
approximately 10,800 secondary teachers in the State of
Kansas.[26]

Description of Subjects

It was the purpose of this study to ascertain the
class size, classroom size, and school size both in which
teachers function and what they believe to be optimum and
compare these with one another and with the established
national standards.

Schools. For this study, purposive multiple cluster
sampling was employed. The State of Kansas was divided into
four quadrants in the following manner: east and west along
U.S. Highway 81 from Nebraska to Oklahoma; north and south
along U.S. Highway 96 from Colorado to Great Bend, and on
U.S. 56, K-150 and U.S. 50S to Emporia and east from there
on a straight line to the Missouri border. From each of
the four resultant sections, ten cities were selected so as
to cover that quadrant as fully as possible (See Fig. 1).
Two criteria were employed in the selection of cities. They

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[26]NEA Research Division, "Estimates of School Statis-
tics 1969-70," Research Report--R15 (January, 1969), p. 31.
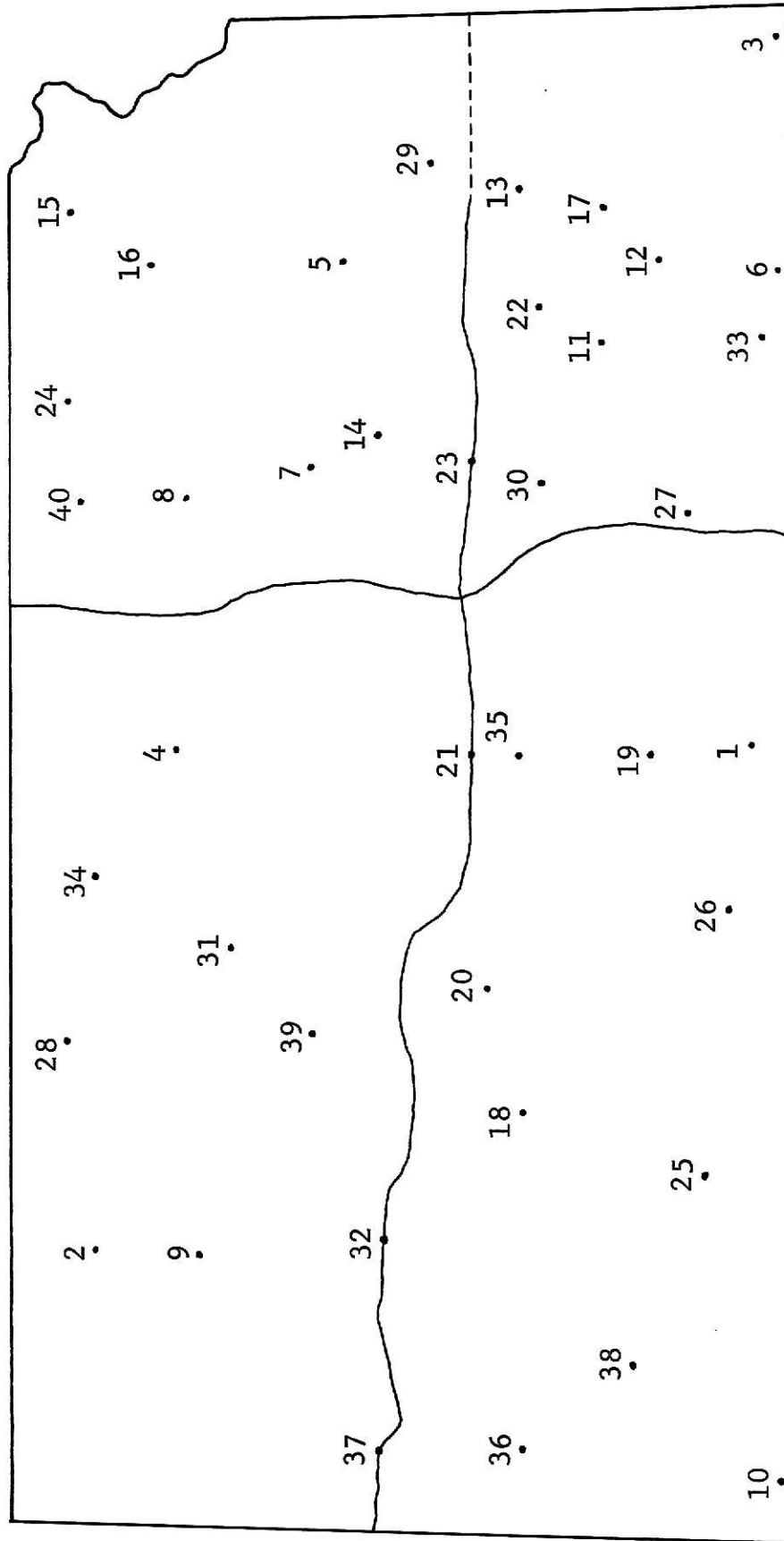
FIGURE 1

SUBDIVISION OF THE STATE OF KANSAS AND LOCATION OF PARTICIPATING CITIES
(SEE TABLE II)

were: (1) the city must have had only one public high
school, (2) this public high school must have been approved
by the Kansas State High School Activities Association 3-A
in size or smaller (See Appendix F).

Teachers. In the cities selected for this study, all
high school teachers were included in the survey with two
exceptions. These exceptions were library personnel and
physical education teachers. Questionnaire limitations on
items B-I and B-III concerning classroom size dictated this
exclusion. The participating cities, instruments sent, and
instruments received can be found in Tables II and III.

Description of Measures Employed

The only accurate source of information concerning
size of school, size of faculty and school administrator
address, was found to be the State Directory.[27]

Letters of Transmittal. To avoid returns from persons
not included within the scope of the sample, a cover letter
(Appendix C) was enclosed which asked the administrator to
distribute the instruments to all his faculty, with the two
above mentioned exceptions. The principal was also asked
to return unused instruments. Attached to the instrument

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[27]Kansas State Department of Education, Kansas Educa-
tional Directory 1969-70 (Topeka: Kansas State Department
of Education, 1969), pp. 56-219.

TABLE II

PARTICIPATING CITIES AND INSTRUMENTS SENT

1.	Anthony 18	21.	Lyons 23
2.	Atwood 21	22.	Madison 12
3.	Baxter Springs . 18	23.	Marion 17
4.	Beloit 21	24.	Marysville . . . 19
5.	Burlingame . . . 10	25.	Meade 16
6.	Caney 26	26.	Medicine Lodge . 21
7.	Chapman 34	27.	Mulvane 20
8.	Clay Center . . . 28	28.	Norton 19
9.	Colby 22	29.	Osawatomie . . . 23
10.	Elkhart 14	30.	Peabody 15
11.	Eureka 16	31.	Plainville . . . 20
12.	Fredonia 18	32.	Scott City . . . 23
13.	Garnett 22	33.	Sedan 14
14.	Herington 18	34.	Smith Center . . 18
15.	Hiawatha 26	35.	Sterling 16
16.	Holton 18	36.	Syracuse 18
17.	Humboldt 20	37.	Tribune 15
18.	Jetmore 11	38.	Ulysses 33
19.	Kingman 34	39.	Wakeeney 20
20.	Larned 20	40.	Washington . . . 18

N = 795

TABLE III

PARTICIPATING CITIES AND INSTRUMENTS RETURNED

1.	Anthony	10	21.	Lyons	17
2.	Atwood	15	22.	Madison	7
3.	Baxter Springs	8	23.	Marion	10
4.	Beloit	14	24.	Marysville	17
5.	Burlingame	9	25.	Meade	9
6.	Caney	0	26.	Medicine Lodge	14
7.	Chapman	18	27.	Mulvane	9
8.	Clay Center	23	28.	Norton	16
9.	Colby	15	29.	Osawatomie	10
10.	Elkhart	9	30.	Peabody	13
11.	Eureka	8	31.	Plainville	8
12.	Fredonia	14	32.	Scott City	16
13.	Garnett	19	33.	Sedan	3
14.	Herington	7	34.	Smith Center	9
15.	Hiawatha	10	35.	Sterling	13
16.	Holton	14	36.	Syracuse	17
17.	Humboldt	6	37.	Tribune	7
18.	Jetmore	2	38.	Ulysses	20
19.	Kingman	14	39.	Wakeeney	11
20.	Larned	9	40.	Washington	12

N = 462

Per Cent Returns 58.1

were two items: (1) a *stamped, addressed return envelope,*
and (2) an informative cover letter (Appendix D) to intro-
duce the teachers to the instrument.

Questionnaire. This instrument was formulated through
consultation with several members of the Graduate Faculty of
Kansas State University and was constructed with two goals
in mind: (1) brevity, and (2) simplicity. It was desired
to gain a maximum of data with as little bother as possible
to the respondent by having provided a short form which was
easily completed. A further enhancement for return was the
stamped, addressed return envelope. The questionnaire was
designed so as to yield data on five independent identifica-
tion variables and nine dependent variables. The five
identification variables provided the sex, teaching experi-
ence in bands of 3 to 5 years, school size in ranges of one
hundred up to 700, educational attainment from less than
baccalaureate to post-masters, and primary subject taught.
The evaluative information of Part B yielded data on actual
and desired class and classroom size and desired school size.
Definitions of some contemporary scheduling models were
footnoted at the bottom of page two to assist those unfamiliar
with the terminology.

Research Design and Procedure

One difficulty encountered was the lack of any listing

of teachers by subject taught. The <u>State Directory</u> listed only an aggregate reflecting the total faculty. Since this aggregate included physical education and library personnel, who were to be excluded as mentioned above, the number of instruments sent to each school represents only an estimate of the classroom faculty of that school. A packet of instruments was mailed to principals with a cover letter explaining distribution procedures.

<u>Mail survey</u>. The total number of instruments mailed to the forty participating schools was 795. This number was believed to represent a fairly accurate total of classroom teachers in the sample.

<u>Method of analysis</u>. Bivariate frequency tables, using chi-square analysis, were constructed. The cell values were the number of the row variable that had responded to the particular column variables as well as the row and column percentages of response. It was anticipated that, arrayed according to the questions in Chapter I, this method of analysis would demonstrate relationships of interest.

<u>Follow-up</u>. Three weeks after initial mailing one of the two follow-up letters found in Appendix H was sent to each school. Which letter the school received was determined by whether or not questionnaires had been received

back from that school. These follow-ups were mailed in hopes that returns would be enhanced.

CHAPTER IV

RESEARCH FINDINGS

Analysis Technique

Analysis of questionnaires returned was accomplished through the use of the Kansas State University 360/50 Computing Center Library Program Chisquare. Chisquare was a canned program that produced bivariate frequency tables of desired variables along with row and column percentages of response, degrees of freedom, chisquare statistic, and chisquare probability for each table. For a complete explanation of the use of Chisquare, see Appendix G. The chisquare statistic and its associated probability were included in this report primarily because they were generated by chisquare and therefore were available; they were not anticipated to be of great significance since the major thrust of the inquiry sought to reveal relationships of interest rather than to test a group of hypotheses. Variable numbers, maximum and minimum values, and variable names may be found in Table IV. A listing of the generated bivariate frequency tables and their respective row and column variables may be found in Table V.

Description of Findings

The questions put forward in Chapter I are repeated below along with any pertinent findings.

TABLE IV

VARIABLE NOMENCLATURE

Variable Number	Minimum Value	Maximum Value	Variable Name
1	1	2	Sex
2	1	6	Years of Teaching Experience
3	1	9	School Enrollment
4	1	6	Level of Educational Attainment
5	1	26	Primary Subject Taught
6	1	10	Classroom Size
7	1	9	Average Class Size
8	1	10	Optimum Classroom Size
9	1	9	Optimum Average Class Size
10	1	10	Optimum Enrollment
11	1	2	Conventional or Non-conventional Scheduling
12	1	2	Experience Teaching Elsewhere
13	1	4	Overall Attitude

TABLE V

BIVARIATE FREQUENCY TABLE VARIABLES

Table Number	Row Variable Number	Col Variable Number
6	3	6
7	3	7
8	3	8
9	3	9
10	3	10
11	5	6
12	5	7
13	5	8
14	5	9
15	6	7
16	6	8
17	6	9
18	7	8
19	7	9
20	8	9
21	1	13
22	2	13
23	3	13
24	4	13
25	5	13
26	12	13

Question I. What is the relationship between the enrollment of the school in which a respondent teaches and:

(a) the size of his classroom? There appeared to be some relationship between school enrollment and classroom size. Most of the schools were clustered in the 200-400 pupil area, while there was a fairly even distribution among the classroom sizes (See Table VI).

(b) the size of his average class? The concentration appeared to be around 15-25 pupils per class (See Table VII).

(c) the classroom size he feels to be optimum? There was some very small relationships here. The general movement seemed to indicate teachers wanted larger classrooms than they indicated they had in Ia (See Table VIII).

(d) the average class size he feels to be optimum? Desired class size seemed to be the same for all sizes of schools (See Table IX).

(e) the total school enrollment he feels to be optimum? Generally the respondents, being from smaller schools, seemed to favor the smaller school (See Table X).

Question II. What is the relationship between the primary subject taught by a respondent and:

TABLE VI

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND CLASSROOM SIZE

Row Variable: School Enrollment
Col Variable: Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
Under 100	0	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101-200	1	7	8	5	3	6	4	1	1	7	43
Row %	2.3	16.3	18.6	11.6	7.0	14.0	9.5	2.3	2.3	16.3	100.0
Col %	2.0	11.9	11.4	9.4	5.6	14.6	16.0	9.1	6.3	10.1	9.6
201-300	18	23	22	21	12	10	5	3	4	26	144
Row %	12.5	16.0	15.3	14.6	8.3	6.9	3.5	2.1	2.8	18.1	100.0
Col %	36.0	39.0	31.4	39.6	22.2	24.4	20.0	27.3	25.0	37.7	32.1
301-400	18	12	28	16	17	16	10	5	5	21	148
Row %	12.2	8.1	18.9	10.8	11.5	10.8	6.8	3.4	3.4	14.2	100.0
Col %	36.0	20.3	40.0	30.2	31.5	39.0	40.0	45.5	31.3	30.4	33.0
401-500	7	13	8	8	11	4	3	0	1	5	60
Row %	11.7	21.7	13.3	13.3	18.3	6.7	5.0	0.0	1.7	8.3	100.0
Col %	14.0	22.0	11.4	15.1	20.4	9.8	12.0	0.0	6.3	7.2	13.4
501-600	6	3	4	2	10	4	2	2	4	4	41
Row %	14.6	7.3	9.8	4.9	24.4	9.8	4.9	4.9	9.8	9.8	100.0
Col %	12.0	5.1	5.7	3.8	18.5	9.8	8.0	18.2	25.0	5.8	9.2

TABLE VI (continued)

Row Variable: School Enrollment
Col Variable: Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
600-700	0	1	0	1	1	1	1	0	1	5	11
Row %	0.0	9.1	0.0	9.1	9.1	9.1	9.1	0.0	9.1	45.5	100.0
Col %	0.0	1.7	0.0	1.9	1.9	2.4	4.0	0.0	6.3	7.2	2.5
701-1000	0	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000+	0	0	0	0	0	0	0	0	0	1	1
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.2
Total	50	59	70	53	54	41	25	11	16	69	448
Row %	11.2	13.2	15.6	11.8	12.1	9.2	5.6	2.5	3.6	15.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 54
Chisquare 61.34633
Chisquare Probability 0.22944

TABLE VII

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND AVERAGE CLASS SIZE

Row Variable: School Enrollment
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
Under 100	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101-200	2	4	15	11	5	3	0	1	2	43
Row %	4.7	9.3	34.9	25.6	11.6	7.0	0.0	2.3	4.7	100.0
Col %	14.3	15.4	14.2	8.5	4.7	6.8	0.0	100.0	10.0	9.5
201-300	8	15	39	35	32	7	2	0	8	146
Row %	5.5	10.3	26.7	24.0	21.9	4.8	1.4	0.0	5.5	100.0
Col %	57.1	57.7	36.8	27.1	29.9	15.9	28.6	0.0	40.0	32.2
301-400	2	4	34	54	30	18	2	0	7	151
Row %	1.3	2.6	22.5	35.8	19.9	11.9	1.3	0.0	4.6	100.0
Col %	14.3	15.4	32.1	41.9	28.0	40.9	28.6	0.0	35.0	33.3
401-500	1	2	10	18	25	1	3	0	0	60
Row %	1.7	3.3	16.7	30.0	41.7	1.7	5.0	0.0	0.0	100.0
Col %	7.1	7.7	9.4	14.0	23.4	2.3	42.9	0.0	0.0	13.2
501-600	1	1	5	9	14	11	0	0	1	42
Row %	2.4	2.4	11.9	21.4	33.3	26.2	0.0	0.0	2.4	100.0
Col %	7.1	3.8	4.7	7.0	13.1	25.0	0.0	0.0	5.0	9.3

TABLE VII (continued)

Row Variable: School Enrollment
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
601-700	0	0	3	2	1	4	0	0	1	11
Row %	0.0	0.0	27.3	18.2	9.1	36.4	0.0	0.0	9.1	100.0
Col %	0.0	0.0	2.8	1.6	0.9	9.1	0.0	0.0	5.0	2.4
701-1000	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000+	0	0	0	0	0	0	0	0	1	1
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.2
Total	14	26	106	129	107	44	7	1	20	454
Row %	3.1	5.7	23.3	28.4	23.6	9.7	1.5	0.2	4.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 48
Chisquare 112.80276
Chisquare Probability 0.00000

TABLE VIII

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND OPTIMUM CLASS SIZE

Row Variable: School Enrollment
Col Variable: Optimum Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
Under 100	0	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101-200	2	2	4	8	6	4	7	1	2	7	43
Row %	4.7	4.7	9.3	18.6	14.0	9.3	16.3	2.3	4.7	16.3	100.0
Col %	22.2	6.5	7.0	16.3	9.4	8.3	13.5	5.9	6.5	8.0	9.6
201-300	4	6	28	17	14	18	12	4	9	31	143
Row %	2.8	4.2	19.6	11.9	9.8	12.6	8.4	2.8	6.3	21.7	100.0
Col %	44.4	19.4	49.1	34.7	21.9	37.5	23.1	23.5	29.0	35.2	32.1
301-400	1	15	13	15	26	16	15	4	17	26	148
Row %	0.7	10.1	8.8	10.1	17.6	10.8	10.1	2.7	11.5	17.6	100.0
Col %	11.1	48.4	22.8	30.6	40.6	33.3	28.8	23.5	54.8	29.5	33.2
401-500	1	5	8	6	13	7	6	3	1	9	59
Row %	1.7	8.5	13.6	10.2	22.0	11.9	10.2	5.1	1.7	15.3	100.0
Col %	11.1	16.1	14.0	10.2	20.3	14.6	11.5	17.6	3.2	10.2	13.2
501-600	1	3	3	2	4	3	11	4	2	8	41
Row %	2.4	7.3	7.3	4.9	9.8	7.3	26.8	9.8	4.9	19.5	100.0
Col %	11.1	9.7	5.3	4.1	6.3	6.3	21.2	23.5	6.5	9.1	9.2

TABLE VIII (continued)

Row Variable: School Enrollment
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
601-700		0	0	1	1	1	0	1	1	0	6	11
	Row %	0.0	0.0	9.1	9.1	9.1	0.0	9.1	9.1	0.0	54.5	100.0
	Col %	0.0	0.0	1.8	2.0	1.6	0.0	1.9	5.9	0.0	6.8	2.5
701-1000		0	0	0	0	0	0	0	0	0	0	0
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000+		0	0	0	0	0	0	0	0	0	1	1
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.2
Total		9	31	57	49	64	48	52	17	31	88	446
	Row %	2.0	7.0	12.8	11.0	14.3	10.8	11.7	3.8	7.0	19.7	100.0
	Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 54
Chisquare ....: 66.72311
Chisquare Probability .....: 0.11458

TABLE IX

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND OPTIMUM CLASS SIZE

Row Variable: School Enrollment
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
Under 100	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101-200	1	1	10	20	5	2	1	0	3	43
Row %	2.3	2.3	23.3	46.5	11.6	4.7	2.3	0.0	7.0	100.0
Col %	25.0	9.1	10.0	11.2	4.8	10.0	20.0	0.0	13.6	9.6
201-300	2	3	45	52	26	4	3	0	9	144
Row %	1.4	2.1	31.3	36.1	18.1	2.8	2.1	0.0	6.3	100.0
Col %	50.0	27.3	45.0	29.1	24.8	20.0	60.0	0.0	40.9	32.0
301-400	0	3	29	59	41	7	1	2	7	149
Row %	0.0	2.0	19.5	39.6	27.5	4.7	0.7	1.3	4.7	100.0
Col %	0.0	27.3	29.0	33.0	39.0	35.0	20.0	50.0	31.8	33.1
401-500	0	3	10	25	20	0	0	2	0	60
Row %	0.0	1.5	16.7	41.7	33.3	0.0	0.0	3.3	0.0	100.0
Col %	0.0	27.3	10.0	14.0	19.0	0.0	0.0	50.0	0.0	13.3
501-600	1	1	5	18	11	5	0	0	1	42
Row %	2.4	2.4	11.9	42.9	26.2	11.9	0.0	0.0	2.4	100.0
Col %	25.0	9.1	5.0	10.1	10.5	25.0	0.0	0.0	4.5	9.3

TABLE IX (continued)

Row Variable: School Enrollment
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
601-700	0	0	1	5	2	2	0	0	1	11
Row %	0.0	0.0	9.1	45.5	18.2	18.2	0.0	0.0	9.1	100.0
Col %	0.0	0.0	1.0	2.8	1.9	10.0	0.0	0.0	4.5	2.4
701-1000	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000+	0	0	0	0	0	0	0	0	1	1
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.2
Total	4	11	100	179	105	20	5	4	22	450
Row %	0.9	2.4	22.0	39.8	23.3	4.4	1.1	0.9	4.9	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 48
Chisquare 73.02361
Chisquare Probability 0.01144

TABLE X

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND OPTIMUM SCHOOL ENROLLMENT

Row Variable: School Enrollment
Col Variable: Optimum School Enrollment

	100	200	300	400	500	600	700	800	900	1000	Total
Under 100	0	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101-200	1	17	10	6	4	3	0	0	0	1	42
Row %	2.4	40.5	23.8	14.3	9.5	7.1	0.0	0.0	0.0	2.4	100.0
Col %	8.3	40.5	12.3	6.7	4.0	5.0	0.0	0.0	0.0	4.8	9.6
201-300	4	17	52	27	20	12	2	2	1	2	139
Row %	2.9	12.2	37.4	19.4	14.4	8.6	1.4	1.4	0.7	1.4	100.0
Col %	33.3	40.5	64.2	30.0	19.8	20.0	16.7	13.3	50.0	9.5	31.9
301-400	4	7	17	43	36	21	4	3	0	11	146
Row %	2.7	4.8	11.6	29.5	24.7	14.4	2.7	5.1	0.0	7.5	100.0
Col %	33.3	16.7	21.0	47.8	35.6	35.0	33.3	20.0	0.0	52.4	33.5
401-500	0	0	1	8	30	8	2	5	0	4	58
Row %	0.0	0.0	1.7	13.8	51.7	13.8	3.4	8.6	0.0	6.9	100.0
Col %	0.0	0.0	1.2	8.9	29.7	13.3	16.7	33.3	0.0	19.0	13.3
501-600	2	0	1	6	10	16	1	1	0	3	40
Row %	5.0	0.0	2.5	15.0	25.0	40.0	2.5	2.5	0.0	7.5	100.0
Col %	16.7	0.0	1.2	6.7	9.9	26.7	8.3	6.7	0.0	14.3	9.2

TABLE X (continued)

Row Variable: School Enrollment
Col Variable: Optimum School Enrollment

	100	200	300	400	500	600	700	800	900	1000	Total
601-700	1	0	0	0	1	0	3	4	1	0	10
Row %	10.0	0.0	0.0	0.0	10.0	0.0	30.0	40.0	10.0	0.0	100.0
Col %	8.3	0.0	0.0	0.0	1.0	0.0	25.0	26.7	50.0	0.0	2.3
701-1000	0	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000+	0	1	0	0	0	0	0	0	0	0	1
Row %	0.0	100.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	100.0
Col %	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total	12	42	81	90	101	60	12	15	2	21	436
Row %	2.8	9.6	18.6	20.0	23.2	13.8	2.8	3.4	0.5	4.8	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 54
Chisquare 287.95117
Chisquare Probability 0.00000

(a) the size of his classroom? There appeared to be no definable relationships with any of the comparisons made to a respondents primary subject (See Table XI).

(b) the size of his average class? (See Table XII).

(c) the classroom size he feels to be optimum? (See Table XIII).

(d) the average class size he feels to be optimum? (See Table XIV).

Question III. What is the relationship between the size of classroom in which a respondent teaches and:

(a) the size of his average class? No relationship seemed apparent (See Table XV).

(b) the classroom size he feels to be optimum? There appeared to be a very slight movement toward a desire for larger classrooms (See Table XVI).

(c) the average class size he feels to be optimum? There were no apparent relationships of interest (See Table XVII).

Question IV. What is the relationship between the average class size with which a respondent functions and:

(a) the classroom size he feels to be optimum? The comparison yielded no new relationships (See Table XVIII).

(b) the average class size he feels to be optimum?

TABLE XI

RELATIONSHIP BETWEEN PRIMARY SUBJECT TAUGHT AND CLASSROOM SIZE

Row Variable: Primary Subject Taught*
Col Variable: Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
1		1	1	1	3	1	1	0	0	0	2	10
	Row %	10.0	10.0	10.0	30.0	10.0	10.0	0.0	0.0	0.0	20.0	100.0
	Col %	2.0	1.7	1.4	5.7	1.9	2.4	0.0	0.0	0.0	2.9	2.2
2		2	2	3	2	3	2	4	2	1	6	27
	Row %	7.4	7.4	11.1	7.4	11.1	7.4	14.8	7.4	3.7	22.2	100.0
	Col %	4.0	3.4	4.3	3.8	5.6	4.9	16.0	18.2	6.3	8.7	6.0
3		2	7	1	6	4	2	2	1	0	0	25
	Row %	8.0	28.0	4.0	24.0	16.0	8.0	8.0	4.0	0.0	0.0	100.0
	Col %	4.0	11.9	1.4	11.3	7.4	4.9	8.0	9.1	0.0	0.0	5.6
4		0	0	0	1	2	1	2	1	1	5	13
	Row %	0.0	0.0	0.0	7.7	15.4	7.7	15.4	7.7	7.7	38.5	100.0
	Col %	0.0	0.0	0.0	1.9	3.7	2.4	8.0	9.1	6.3	7.2	2.9
5		0	0	0	0	0	1	0	0	1	0	2
	Row %	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	6.3	0.0	0.4
6		1	1	1	1	1	1	0	0	0	0	6
	Row %	16.7	16.7	16.7	16.7	16.7	16.7	0.0	0.0	0.0	0.0	100.0
	Col %	2.0	1.7	1.4	1.9	1.9	2.4	0.0	0.0	0.0	0.0	1.3
7		14	17	9	5	11	6	2	1	2	5	72
	Row %	19.4	23.6	12.5	6.9	15.3	8.3	2.8	1.4	2.8	6.9	100.0
	Col %	28.0	28.8	12.9	9.4	20.4	14.6	8.0	9.1	12.5	7.2	16.1

TABLE XI (continued)

Row Variable: Primary Subject Taught*
Col Variable: Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
8		0	0	0	0	0	0	0	0	0	0	0
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9		5	3	6	4	3	0	3	0	1	0	25
	Row %	20.0	12.0	24.0	16.0	12.0	0.0	12.0	0.0	4.0	0.0	100.0
	Col %	10.0	5.1	8.6	7.5	5.6	0.0	12.0	0.0	6.3	0.0	5.6
10		2	3	2	0	3	2	1	0	2	7	22
	Row %	9.1	13.6	9.1	0.0	13.6	9.1	4.5	0.0	9.1	31.8	100.0
	Col %	4.0	5.1	2.9	0.0	5.6	4.9	4.0	0.0	12.5	10.1	4.9
11		0	4	3	1	1	1	0	0	0	1	11
	Row %	0.0	36.4	27.3	9.1	9.1	9.1	0.0	0.0	0.0	9.1	100.0
	Col %	0.0	6.8	4.3	1.9	1.9	2.4	0.0	0.0	0.0	1.4	2.5
12		0	1	0	0	1	0	0	0	1	6	9
	Row %	0.0	11.1	0.0	0.0	11.1	0.0	0.0	0.0	11.1	66.7	100.0
	Col %	0.0	1.7	0.0	0.0	1.9	0.0	0.0	0.0	6.3	8.7	8.7
13		0	0	0	1	1	0	3	0	0	10	15
	Row %	0.0	0.0	0.0	6.7	6.7	0.0	20.0	0.0	0.0	66.7	100.0
	Col %	0.0	0.0	0.0	1.9	1.9	0.0	12.0	0.0	0.0	14.5	3.3
14		3	10	13	10	6	8	2	0	0	0	52
	Row %	5.8	19.2	25.0	19.2	11.5	15.4	3.8	0.0	0.0	0.0	100.0
	Col %	6.0	16.9	18.6	18.9	11.1	19.5	8.0	0.0	0.0	0.0	11.6
15		0	0	1	2	2	1	0	1	0	2	9
	Row %	0.0	0.0	11.1	22.2	22.2	11.1	0.0	11.1	0.0	22.2	100.0
	Col %	0.0	0.0	1.4	3.8	3.7	2.4	0.0	9.1	0.0	2.9	2.0

TABLE XI (continued)

Row Variable: Primary Subject Taught*
Col Variable: Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
16	0	0	0	0	0	0	0	0	2	2	2
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9	0.4
17	0	0	1	0	1	1	0	0	0	0	3
Row %	0.0	0.0	33.3	0.0	33.3	33.3	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	1.4	0.0	1.9	2.4	0.0	0.0	0.0	0.0	0.7
18	1	0	0	0	0	0	0	0	0	0	1
Row %	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
19	11	5	14	8	7	9	3	1	1	1	60
Row %	18.3	8.3	23.3	13.3	11.7	15.0	5.0	1.7	1.7	1.7	100.0
Col %	22.0	8.5	20.0	15.1	13.0	22.0	12.0	9.1	6.3	1.4	13.4
20	2	1	4	0	3	0	0	1	1	1	13
Row %	15.4	7.7	30.8	0.0	23.1	0.0	0.0	7.7	7.7	7.7	100.0
Col %	4.0	1.7	5.7	0.0	5.6	0.0	0.0	9.1	6.3	1.4	2.9
21	3	0	7	4	2	1	2	1	3	0	23
Row %	13.0	0.0	30.4	17.4	8.7	4.3	8.7	4.3	13.0	0.0	100.0
Col %	6.0	0.0	10.0	7.5	3.7	2.4	8.0	9.1	18.8	0.0	5.1
22	1	0	0	1	0	1	0	2	1	4	10
Row %	10.0	0.0	0.0	10.0	0.0	10.0	0.0	20.0	10.0	40.0	100.0
Col %	2.0	0.0	0.0	1.9	0.0	2.4	0.0	18.2	6.3	5.8	2.2
23	2	3	3	3	1	3	0	0	0	3	18
Row %	11.1	16.7	16.7	16.7	5.6	16.7	0.0	0.0	0.0	16.7	100.0
Col %	4.0	5.1	4.3	5.7	1.9	7.3	0.0	0.0	0.0	4.3	4.0

TABLE XI (continued)

Row Variable: Primary Subject Taught*
Col Variable: Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
24	0	1	0	0	1	0	1	0	1	12	16
Row %	0.0	6.3	0.0	0.0	6.3	0.0	6.3	0.0	6.3	75.0	100.0
Col %	0.0	1.7	0.0	0.0	1.9	0.0	4.0	0.0	6.3	17.4	3.6
25	0	0	1	1	0	0	0	0	0	0	2
Row %	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	1.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4
26	0	0	0	0	0	0	0	0	0	2	2
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.4
Total	50	59	70	53	54	41	25	11	16	69	448
Row %	11.2	13.2	15.6	11.8	12.1	9.2	5.6	2.5	3.6	15.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 216
Chisquare 360.81641
Chisquare Probability 0.00000

*Row Variables

1.	Art	19.	All Social Sciences
2.	Biology	20.	Speech/Debate/Dramatics
3.	All Business Courses	21.	Typing
4.	Chemistry	22.	Vocal Music
5.	Clothing	23.	Vocational Agriculture
6.	Driver Education	24.	Wood Shop
7.	English	25.	Special Education
8.	Foods	26.	Auto/Power Mechanics
9.	Foreign Language		
10.	General Home Economics		
11.	General Science		
12.	General Shop		
13.	Instrumental Music		
14.	Mathematics		
15.	Mechanical Drawing		
16.	Metal Shop		
17.	Physics		
18.	Reading		

TABLE XII

RELATIONSHIP BETWEEN PRIMARY SUBJECT TAUGHT AND AVERAGE CLASS SIZE

Row Variable: Primary Subject Taught*
Col Variable: Average Class Size

		Under 10	10	15	20	25	30	35	40	40+	Total
1		0	2	4	4	0	0	0	0	0	10
	Row %	0.0	20.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	8.0	3.7	3.1	0.0	0.0	0.0	0.0	0.0	2.2
2		0	1	3	11	7	5	0	0	0	27
	Row %	0.0	3.7	11.1	40.7	25.9	18.5	0.0	0.0	0.0	100.0
	Col %	0.0	4.0	2.8	8.5	6.5	11.4	0.0	0.0	0.0	5.9
3		0	3	7	7	5	3	0	0	0	25
	Row %	0.0	12.0	28.0	28.0	20.0	12.0	0.0	0.0	0.0	100.0
	Col %	0.0	12.0	6.5	5.4	4.7	6.8	0.0	0.0	0.0	5.5
4		2	1	8	0	2	0	0	0	0	13
	Row %	15.4	7.7	61.5	0.0	15.4	0.0	0.0	0.0	0.0	100.0
	Col %	14.3	4.0	7.5	0.0	1.9	0.0	0.0	0.0	0.0	2.9
5		0	0	0	2	0	0	0	0	0	2
	Row %	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.4
6		1	0	0	1	1	2	1	0	0	6
	Row %	16.7	0.0	0.0	16.7	16.7	33.3	16.7	0.0	0.0	100.0
	Col %	7.1	0.0	0.0	0.8	0.9	4.5	14.3	0.0	0.0	1.3
7		0	1	9	24	33	4	1	0	1	73
	Row %	0.0	1.4	12.3	32.9	45.2	5.5	1.4	0.0	1.4	100.0
	Col %	0.0	4.0	8.4	18.6	30.8	9.1	14.3	0.0	5.0	16.1

TABLE XII (continued)

Row Variable: Primary Subject Taught*
Col Variable: Average Class Size

		Under 10	10	15	20	25	30	35	40	40+	Total
8		0	0	0	0	0	0	0	0	0	0
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9		1	9	8	7	1	0	0	0	0	26
	Row %	3.8	34.6	30.8	26.9	3.8	0.0	0.0	0.0	0.0	100.0
	Col %	7.1	36.0	7.5	5.4	0.9	0.0	0.0	0.0	0.0	5.7
10		0	2	12	8	1	0	0	0	0	23
	Row %	0.0	8.7	52.2	34.8	4.3	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	8.0	11.2	6.2	0.9	0.0	0.0	0.0	0.0	5.1
11		0	0	1	4	5	1	0	0	0	11
	Row %	0.0	0.0	9.1	36.4	45.5	9.1	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	0.9	3.1	4.7	2.3	0.0	0.0	0.0	2.4
12		0	0	4	5	0	0	0	0	0	9
	Row %	0.0	0.0	44.4	55.6	0.0	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	3.7	3.9	0.0	0.0	0.0	0.0	0.0	2.0
13		0	0	0	0	0	1	1	0	14	16
	Row %	0.0	0.0	0.0	0.0	0.0	6.3	6.3	0.0	87.5	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	2.3	14.3	0.0	70.0	3.5
14		0	0	15	16	15	6	0	0	0	52
	Row %	0.0	0.0	28.8	30.8	28.8	11.5	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	14.0	12.4	14.0	13.6	0.0	0.0	0.0	11.5
15		1	0	1	7	0	0	0	0	0	9
	Row %	11.1	0.0	11.1	77.8	0.0	0.0	0.0	0.0	0.0	100.0
	Col %	7.1	0.0	7.1	5.4	0.0	0.0	0.0	0.0	0.0	2.0

TABLE XII (continued)

Row Variable: Primary Subject Taught[*]
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
16	0	0	2	0	0	0	0	0	0	2
Row %	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4
17	0	2	0	1	0	0	0	0	0	3
Row %	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	8.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.7
18	0	0	0	0	1	0	0	0	0	1
Row %	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.2
19	0	0	3	18	24	13	2	0	0	60
Row %	0.0	0.0	5.0	30.0	40.0	21.7	3.3	0.0	0.0	100.0
Col %	0.0	0.0	2.8	14.0	22.4	29.5	28.6	0.0	0.0	13.2
20	1	0	6	4	3	1	0	0	0	15
Row %	6.7	0.0	40.0	26.7	20.0	6.7	0.0	0.0	0.0	100.0
Col %	7.1	0.0	5.6	3.1	2.8	2.3	0.0	0.0	0.0	3.3
21	1	1	2	3	8	7	1	0	0	23
Row %	4.3	4.3	8.7	13.0	34.8	30.4	4.3	0.0	0.0	100.0
Col %	7.1	4.0	1.9	2.3	7.5	15.9	14.3	0.0	0.0	5.1
22	1	0	0	0	1	1	1	1	5	10
Row %	10.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	50.0	100.0
Col %	7.1	0.0	0.0	0.0	0.9	2.3	14.3	100.0	25.0	2.2
23	3	2	12	1	0	0	0	0	0	18
Row %	16.7	11.1	66.7	5.6	0.0	0.0	0.0	0.0	0.0	100.0
Col %	21.4	8.0	11.2	0.8	0.0	0.0	0.0	0.0	0.0	4.0

TABLE XII (continued)

Row Variable: Primary Subject Taught*
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
24	1	1	9	5	0	0	0	0	0	16
Row %	6.3	6.3	56.3	31.3	0.0	0.0	0.0	0.0	0.0	100.0
Col %	7.1	4.0	8.4	3.9	0.0	0.0	0.0	0.0	0.0	3.5
25	2	0	0	0	0	0	0	0	0	2
Row %	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
26	0	1	1	0	0	0	0	0	0	2
Row %	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total	14	25	107	129	107	44	7	1	20	454
Row %	3.1	5.5	23.6	28.4	23.6	9.7	1.5	0.2	4.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 192
Chisquare 769.07007
Chisquare Probability 0.00000

*Row Variables

1. Art
2. Biology
3. All Business Courses
4. Chemistry
5. Clothing
6. Driver Education
7. English
8. Foods
9. Foreign Language
10. General Home Economics
11. General Science
12. General Shop
13. Instrumental Music
14. Mathematics
15. Mechanical Drawing
16. Metal Shop
17. Physics
18. Reading
19. All Social Sciences
20. Speech/Debate/Dramatics
21. Typing
22. Vocal Music
23. Vocational Agriculture
24. Wood Shop
25. Special Education
26. Auto/Power Mechanics

TABLE XIII

RELATIONSHIP BETWEEN PRIMARY SUBJECT TAUGHT AND OPTIMUM CLASSROOM SIZE

Row Variable: Primary Subject Taught*
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
1		0	0	0	0	2	1	1	1	0	5	10
	Row %	0.0	0.0	0.0	0.0	20.0	10.0	10.0	10.0	0.0	50.0	100.0
	Col %	0.0	0.0	0.0	0.0	3.1	2.1	1.9	5.9	0.0	5.7	2.2
2		0	3	1	1	3	1	5	2	5	6	27
	Row %	0.0	11.1	3.7	3.7	11.1	3.7	18.5	7.4	18.5	22.2	100.0
	Col %	0.0	9.7	1.8	2.0	4.7	2.1	9.6	11.8	16.1	6.8	6.1
3		0	1	3	6	6	2	4	1	1	1	25
	Row %	0.0	4.0	12.0	24.0	24.0	8.0	16.0	4.0	4.0	4.0	100.0
	Col %	0.0	3.2	5.3	12.2	9.4	4.2	7.7	5.9	3.2	1.1	5.6
4		0	0	0	0	0	2	2	0	4	5	13
	Row %	0.0	0.0	0.0	0.0	0.0	15.4	15.4	0.0	30.8	38.5	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	4.2	3.8	0.0	12.9	5.7	2.9
5		0	0	0	0	1	0	0	0	0	1	2
	Row %	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	100.0
	Col %	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.1	0.4
6		0	0	1	2	0	2	1	0	0	0	6
	Row %	0.0	0.0	16.7	33.3	0.0	33.3	16.7	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	1.8	4.1	0.0	4.2	1.9	0.0	0.0	0.0	1.3
7		5	11	9	8	10	9	9	2	4	3	70
	Row %	7.1	15.7	12.9	11.4	14.3	12.9	12.9	2.9	5.7	4.3	100.0
	Col %	55.6	35.5	15.8	16.3	15.6	18.8	17.3	11.8	12.9	3.4	15.7

TABLE XIII (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
8	Row	0	0	0	0	0	0	0	0	0	0	0
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Row	0	1	8	7	3	1	3	1	0	1	25
	Row %	0.0	4.0	32.0	28.0	12.0	4.0	12.0	4.0	0.0	4.0	100.0
	Col %	0.0	3.2	14.0	14.3	4.7	2.1	5.8	5.9	0.0	1.1	5.6
10	Row	1	2	1	1	3	2	2	0	2	8	22
	Row %	4.5	9.1	4.5	4.5	13.6	9.1	9.1	0.0	9.1	36.4	100.0
	Col %	11.1	6.5	1.8	2.0	4.7	4.2	3.8	0.0	6.5	9.1	4.9
11	Row	0	0	2	2	4	0	2	0	0	1	11
	Row %	0.0	0.0	18.2	18.2	36.4	0.0	18.2	0.0	0.0	9.1	100.0
	Col %	0.0	0.0	3.5	4.1	6.3	0.0	3.8	0.0	0.0	1.1	2.5
12	Row	0	1	0	0	0	0	0	0	0	8	9
	Row %	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.9	100.0
	Col %	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	2.0
13	Row	0	0	0	0	0	1	2	0	1	11	15
	Row %	0.0	0.0	0.0	0.0	0.0	6.7	13.3	0.0	6.7	73.3	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	2.1	3.8	0.0	3.2	12.5	11.7
14	Row	0	5	8	8	12	9	7	1	1	1	52
	Row %	0.0	9.6	15.4	15.4	23.1	17.3	13.5	1.9	1.9	1.9	100.0
	Col %	0.0	16.1	14.0	16.3	18.8	18.8	13.5	5.9	3.2	1.1	11.7
15	Row	0	0	0	0	1	1	3	1	2	1	9
	Row %	0.0	0.0	0.0	0.0	11.1	11.1	33.3	11.1	22.2	11.1	100.0
	Col %	0.0	0.0	0.4	0.0	1.6	2.1	5.8	5.9	6.5	1.1	0.4

TABLE XIII (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
16		0	0	0	0	0	0	0	0	0	2	2
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.4
17		0	0	0	0	1	0	0	0	2	0	3
	Row %	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	66.7	0.0	100.0
	Col %	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	6.5	0.0	0.7
18		0	0	1	0	0	0	0	0	0	0	1
	Row %	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
19		1	5	11	8	10	10	3	3	3	5	59
	Row %	1.7	8.5	18.6	13.6	16.9	16.9	5.1	5.1	5.1	8.5	100.0
	Col %	11.1	16.1	19.3	16.3	15.6	20.8	5.8	17.6	9.7	5.7	13.2
20		0	0	4	1	1	2	3	0	2	1	14
	Row %	0.0	0.0	28.6	7.1	7.1	14.3	21.4	0.0	14.3	7.1	100.0
	Col %	0.0	0.0	7.0	2.0	1.6	4.2	5.8	0.0	6.5	1.1	3.1
21		1	1	2	1	4	2	4	3	3	2	23
	Row %	4.3	4.3	8.7	4.3	17.4	8.7	17.4	13.0	13.0	8.7	100.0
	Col %	11.1	3.2	3.5	2.0	6.3	4.2	7.7	17.6	9.7	2.3	5.2
22		1	0	0	0	0	1	0	2	1	5	10
	Row %	10.0	0.0	0.0	0.0	0.0	10.0	0.0	20.0	10.0	50.0	100.0
	Col %	11.1	0.0	0.0	0.0	0.0	2.1	0.0	11.8	3.2	5.7	2.2
23		0	1	5	3	3	2	1	0	0	3	18
	Row %	0.0	5.6	27.8	16.7	16.7	11.1	5.6	0.0	0.0	16.7	100.0
	Col %	0.0	3.2	8.8	6.1	4.7	4.2	1.9	0.0	0.0	3.4	4.0

TABLE XIII (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
24		0	0	1	0	0	0	0	0	0	15	16
	Row %	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	93.8	100.0
	Col %	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	17.0	3.6
25		0	0	0	1	0	0	0	0	0	1	2
	Row %	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	100.0
	Col %	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.1	0.4
26		0	0	0	0	0	0	0	0	0	2	2
	Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.4
Total		9	31	57	49	64	48	52	17	31	88	446
	Row %	2.0	7.0	12.8	11.0	14.3	10.8	11.7	3.8	7.0	19.7	100.0
	Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 216
Chisquare 377.19312
Chisquare Probability 0.00000

*Row Variables

1. Art	10. General Home Economics	19. All Social Sciences
2. Biology	11. General Science	20. Speech/Debate/Dramatics
3. All Business Courses	12. General Shop	21. Typing
4. Chemistry	13. Instrumental Music	22. Vocal Music
5. Clothing	14. Mathematics	23. Vocational Agriculture
6. Driver Education	15. Mechanical Drawing	24. Wood Shop
7. English	16. Metal Shop	25. Special Education
8. Foods	17. Physics	26. Auto/Power Mechanics
9. Foreign Language	18. Reading	

TABLE XIV

RELATIONSHIP BETWEEN PRIMARY SUBJECT TAUGHT AND OPTIMUM CLASS SIZE

Row Variable: Primary Subject Taught*
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
1	0	0	5	5	0	0	0	0	0	10
Row %	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	5.0	2.8	0.0	0.0	0.0	0.0	0.0	2.2
2	0	0	4	14	8	1	0	0	0	27
Row %	0.0	0.0	14.8	51.9	29.6	3.7	0.0	0.0	0.0	100.0
Col %	0.0	0.0	4.0	7.8	7.6	5.0	0.0	0.0	0.6	6.0
3	0	0	5	10	10	0	0	0	0	25
Row %	0.0	0.0	20.0	40.0	40.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	5.0	5.6	9.5	0.0	0.0	0.0	0.0	5.6
4	1	0	3	7	2	0	0	0	0	13
Row %	7.7	0.0	23.1	53.8	15.4	0.0	0.0	0.0	0.0	100.0
Col %	25.0	0.0	3.0	3.9	1.9	0.0	0.0	0.0	0.0	2.9
5	0	0	1	1	0	0	0	0	0	2
Row %	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	1.0	0.6	0.0	0.0	0.0	0.0	0.0	0.4
6	1	0	0	1	3	1	0	0	0	6
Row %	16.7	0.0	0.0	16.7	50.0	16.7	0.0	0.0	0.0	100.0
Col %	25.0	0.0	0.0	0.6	2.9	5.0	0.0	0.0	0.0	1.3
7	0	1	8	35	24	1	1	0	1	71
Row %	0.0	1.4	11.3	49.3	33.8	1.4	1.4	0.0	1.4	100.0
Col %	0.0	10.0	7.9	19.6	22.9	5.0	20.0	0.0	4.5	15.8

TABLE XIV (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
8	0	0	0	0	0	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0	2	10	10	3	1	0	0	0	26
Row %	0.0	7.7	38.5	38.5	11.5	3.8	0.0	0.0	0.0	100.0
Col %	0.0	20.0	9.9	5.6	2.9	5.0	0.0	0.0	0.0	5.8
10	0	0	13	10	0	0	0	0	0	23
Row %	0.0	0.0	56.5	43.5	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	12.9	5.6	0.0	0.0	0.0	0.0	0.0	5.1
11	0	0	2	5	4	0	0	0	0	11
Row %	0.0	0.0	18.2	45.5	36.4	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	2.0	2.8	3.8	0.0	0.0	0.0	0.0	2.4
12	0	1	4	2	1	1	0	0	0	9
Row %	0.0	11.1	44.4	22.2	11.1	11.1	0.0	0.0	0.0	100.0
Col %	0.0	10.0	4.0	1.1	1.0	5.0	0.0	0.0	0.0	2.0
13	0	0	0	1	0	0	0	0	15	16
Row %	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	93.8	100.0
Col %	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	68.2	3.6
14	0	0	9	27	15	1	0	0	0	52
Row %	0.0	0.0	17.3	51.9	28.8	1.9	0.0	0.0	0.0	100.0
Col %	0.0	0.0	8.9	15.1	14.3	5.0	0.0	0.0	0.0	11.6
15	0	0	3	5	1	0	0	0	0	9
Row %	0.0	0.0	33.3	55.6	11.1	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	3.0	2.8	1.0	0.0	0.0	0.0	0.0	2.0

TABLE XIV (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Class Size

		Under 10	10	15	20	25	30	35	40	40+	Total
16	Row %	0	0	2	0	0	0	0	0	0	2
		0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.2
	Col %	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
17	Row %	0	1	1	0	1	0	0	0	0	3
		0.0	33.3	33.3	0.0	33.3	0.0	0.0	0.0	0.0	100.0
	Col %	0.0	10.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.7
18	Row %	0	0	0	0	0	1	0	0	0	1
		0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.2
19	Row %	0	0	2	29	22	6	1	0	0	60
		0.0	0.0	3.3	48.3	36.7	10.0	1.7	0.0	0.0	100.0
	Col %	0.0	0.0	2.0	16.2	21.0	30.0	20.0	0.0	0.0	13.3
20	Row %	0	0	5	5	3	1	0	0	0	14
		0.0	0.0	35.7	35.7	21.4	7.1	0.0	0.0	0.0	100.0
	Col %	0.0	0.0	5.0	2.8	2.9	5.0	0.0	0.0	0.0	3.1
21	Row %	0	0	0	5	8	6	0	3	0	22
		0.0	0.0	0.0	22.7	36.4	27.3	0.0	13.6	0.0	100.0
	Col %	0.0	0.0	0.0	2.8	7.6	30.0	0.0	75.0	0.0	4.9
22	Row %	1	0	0	0	0	0	3	1	5	10
		10.0	0.0	0.0	0.0	0.0	0.0	30.0	10.0	50.0	100.0
	Col %	25.0	0.0	0.0	0.0	0.0	0.0	60.0	25.0	22.7	2.2
23	Row %	0	1	13	3	0	0	0	0	1	18
		0.0	5.6	72.2	16.7	0.0	0.0	0.0	0.0	5.6	100.0
	Col %	0.0	10.0	12.9	1.7	0.0	0.0	0.0	0.0	4.5	4.0

TABLE XIV (continued)

Row Variable: Primary Subject Taught*
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
24	0	2	10	4	0	0	0	0	0	16
Row %	0.0	12.5	62.5	25.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	20.0	9.9	2.2	0.0	0.0	0.0	0.0	0.0	3.6
25	0	2	0	0	0	0	0	0	0	2
Row %	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
26	1	0	1	0	0	0	0	0	0	2
Row %	50.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	25.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total	4	10	101	179	105	20	5	4	22	450
Row %	0.9	2.2	22.4	39.8	23.3	4.4	1.1	0.9	4.9	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 192
Chisquare 883.03174
Chisquare Probability 0.00000

*Row Variables

1.	Art	10.	General Home Economics
2.	Biology	11.	General Science
3.	All Business Courses	12.	General Shop
4.	Chemistry	13.	Instrumental Music
5.	Clothing	14.	Mathematics
6.	Driver Education	15.	Mechanical Drawing
7.	English	16.	Metal Shop
8.	Foods	17.	Physics
9.	Foreign Language	18.	Reading
		19.	All Social Sciences
		20.	Speech/Debate/Dramatics
		21.	Typing
		22.	Vocal Music
		23.	Vocational Agriculture
		24.	Wood Shop
		25.	Special Education
		26.	Auto/Power Mechanics

TABLE XV

RELATIONSHIP BETWEEN CLASSROOM SIZE AND AVERAGE CLASS SIZE

Row Variable: Classroom Size
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
400	3	5	7	14	17	4	0	0	0	50
Row %	6.0	10.0	14.0	28.0	34.0	8.0	0.0	0.0	0.0	100.0
Col %	23.1	20.0	6.6	10.9	16.0	9.1	0.0	0.0	0.0	11.1
500	0	4	17	15	20	3	0	0	0	59
Row %	0.0	6.8	28.8	25.4	33.9	5.1	0.0	0.0	0.0	100.0
Col %	0.0	16.0	16.0	11.7	18.9	6.8	0.0	0.0	0.0	13.1
600	2	3	16	28	15	6	0	0	0	70
Row %	2.9	4.3	22.9	40.0	21.4	8.6	0.0	0.0	0.0	100.0
Col %	15.4	12.0	15.1	21.9	14.2	13.6	0.0	0.0	0.0	15.6
700	3	3	10	15	14	5	2	0	1	53
Row %	5.7	5.7	18.9	28.3	26.4	9.4	3.8	0.0	1.9	100.0
Col %	23.1	12.0	9.4	11.7	13.2	11.4	28.6	0.0	5.3	11.8
800	1	2	11	17	13	9	0	0	1	54
Row %	1.9	3.7	20.4	31.5	24.1	16.7	0.0	0.0	1.9	100.0
Col %	7.7	8.0	10.4	13.3	12.3	20.5	0.0	0.0	5.3	12.0
900	1	2	7	12	12	5	1	0	1	41
Row %	2.4	4.9	17.1	29.3	29.3	12.2	2.4	0.0	2.4	100.0
Col %	7.7	8.1	6.6	9.4	11.3	11.4	14.3	0.0	5.3	9.1

TABLE XV (continued)

Row Variable: Classroom Size
Col Variable: Average Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
1000	0	1	2	9	6	5	0	0	2	25
Row %	0.0	4.0	8.0	36.0	24.0	20.0	0.0	0.0	8.0	100.0
Col %	0.0	4.0	1.9	7.0	5.7	11.4	0.0	0.0	10.5	5.6
1100	0	0	2	3	2	2	1	0	1	11
Row %	0.0	0.0	18.2	27.3	18.2	18.2	9.1	0.0	9.1	100.0
Col %	0.0	0.0	1.9	2.3	1.9	4.5	14.3	0.0	5.3	2.4
1200	1	1	3	5	3	2	0	1	0	16
Row %	6.3	6.3	18.8	31.3	18.8	12.5	0.0	6.3	0.0	100.0
Col %	7.7	4.0	2.8	3.9	2.8	4.5	0.0	100.0	0.0	3.6
1200+	2	4	31	10	4	3	3	0	13	70
Row %	2.9	5.7	44.3	14.3	5.7	4.3	4.3	0.0	18.6	100.0
Col %	15.4	16.0	29.2	7.8	3.8	6.8	42.9	0.0	68.4	15.6
Total	13	25	106	128	106	44	7	1	19	449
Row %	2.9	5.6	23.6	28.5	23.6	9.8	1.6	0.2	4.2	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 72
Chisquare ....: 150.50987
Chisquare Probability ....: 0.00000

TABLE XVI

RELATIONSHIP BETWEEN CLASSROOM SIZE AND OPTIMUM CLASSROOM SIZE

Row Variable: Classroom Size
Col Variable: Optimum Classroom Size

		400	500	600	700	800	900	1000	1100	1200	1200+	Total
400		8	12	19	2	4	2	0	0	0	1	48
	Row %	16.7	25.0	39.6	4.2	8.3	4.2	0.0	0.0	0.0	2.1	100.0
	Col %	88.9	38.7	33.3	4.2	6.3	4.2	0.0	0.0	0.0	1.1	10.8
500		0	17	17	14	6	1	3	0	0	0	58
	Row %	0.0	29.3	29.3	24.1	10.3	1.7	5.2	0.0	0.0	0.0	100.0
	Col %	0.0	54.8	29.8	29.2	9.5	2.1	5.8	0.0	0.0	0.0	13.0
600		1	1	19	14	16	11	5	0	2	0	69
	Row %	1.4	1.4	27.5	20.3	23.2	15.9	7.2	0.0	2.9	0.0	100.0
	Col %	11.1	3.2	33.3	29.2	25.4	22.9	9.6	0.0	6.5	0.0	15.5
700		0	0	2	16	15	5	7	2	1	5	53
	Row %	0.0	0.0	3.8	30.2	28.3	9.4	13.2	3.8	1.9	9.4	100.0
	Col %	0.0	0.0	3.5	33.3	23.8	10.4	13.5	11.8	3.2	5.6	11.9
800		0	0	0	2	20	10	14	4	0	4	54
	Row %	0.0	0.0	0.0	3.7	37.0	18.5	25.9	7.4	0.0	7.4	100.0
	Col %	0.0	0.0	0.0	4.2	31.7	20.8	26.9	23.5	0.0	4.5	12.1
900		0	1	0	0	2	16	10	5	6	1	41
	Row %	0.0	2.4	0.0	0.0	4.9	39.0	24.4	12.2	14.6	2.4	100.0
	Col %	0.0	3.2	0.0	0.0	3.2	33.3	19.2	29.4	19.4	1.1	9.2
1000		0	0	0	0	0	3	11	2	7	2	25
	Row %	0.0	0.0	0.0	0.0	0.0	12.0	44.0	8.0	28.0	8.0	100.0
	Col %	0.0	0.0	0.0	0.0	0.0	6.3	21.2	11.8	22.6	2.2	5.6

TABLE XVI (continued)

Row Variable: Classroom Size
Col Variable: Optimum Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
1100	0	0	0	0	0	0	1	2	4	4	11
Row %	0.0	0.0	0.0	0.0	0.0	0.0	9.1	18.2	36.4	36.4	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	1.9	11.8	12.9	4.5	2.5
1200	0	0	0	0	0	0	0	1	7	8	16
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	43.8	50.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	22.6	9.0	3.6
1200+	0	0	0	0	0	0	0	1	1	64	70
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	91.4	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	12.9	71.9	15.7
Total	9	31	57	48	63	48	52	17	31	89	445
Row %	2.0	7.0	12.8	10.8	14.2	10.8	11.7	3.8	7.0	20.0	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 81
Chisquare ....: 778.31323
Chisquare Probability ....: 0.00000

TABLE XVII

RELATIONSHIP BETWEEN CLASSROOM SIZE AND OPTIMUM CLASS SIZE

Row Variable: Classroom Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
400	2	1	13	21	11	1	0	0	1	50
Row %	4.0	2.0	26.0	42.0	22.0	2.0	0.0	0.0	2.0	100.0
Col %	50.0	10.0	13.0	11.8	10.5	5.3	0.0	0.0	4.8	11.2
500	0	1	12	28	17	0	0	0	0	58
Row %	0.0	1.7	20.7	48.3	29.3	0.0	0.0	0.0	0.0	100.0
Col %	0.0	10.0	12.0	15.7	16.2	0.0	0.0	0.0	0.0	13.0
600	0	2	11	37	19	0	0	0	0	69
Row %	0.0	2.9	15.9	53.6	27.5	0.0	0.0	0.0	0.0	100.0
Col %	0.0	20.0	11.0	20.8	18.1	0.0	0.0	0.0	0.0	15.5
700	0	1	10	19	18	3	0	1	1	53
Row %	0.0	1.9	18.9	35.8	34.0	5.7	0.0	1.9	1.9	100.0
Col %	0.0	10.0	10.0	10.7	17.1	15.8	0.0	25.0	4.8	11.9
800	0	0	15	20	13	4	0	1	1	54
Row %	0.0	0.0	27.8	37.0	24.1	7.4	0.0	1.9	1.9	100.0
Col %	0.0	0.0	15.0	11.2	12.4	21.1	0.0	25.0	4.8	12.1
900	1	1	5	19	9	4	1	0	1	41
Row %	2.4	2.4	12.2	46.3	22.0	9.8	2.4	0.0	2.4	100.0
Col %	25.0	10.0	5.0	10.7	8.6	21.1	20.0	0.0	4.8	9.2

TABLE XVII (continued)

Row Variable: Classroom Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
1000	0	0	7	6	6	3	0	0	3	25
Row %	0.0	0.0	28.0	24.0	24.0	12.0	0.0	0.0	12.0	100.0
Col %	0.0	0.0	7.0	3.4	5.7	15.8	0.0	0.0	14.3	5.6
1100	0	0	1	3	4	0	1	1	1	11
Row %	0.0	0.0	9.1	27.3	36.4	0.0	1.9	1.9	1.9	100.0
Col %	0.0	0.0	1.0	1.7	3.8	0.0	20.0	25.0	4.8	2.5
1200	0	0	3	7	2	1	1	1	0	15
Row %	0.0	0.0	20.0	46.7	13.3	6.7	6.7	6.7	0.0	100.0
Col %	0.0	0.0	3.0	3.9	1.9	5.3	20.0	25.0	0.0	3.4
1200+	1	4	23	18	6	3	2	0	13	70
Row %	1.4	5.7	32.9	25.7	8.6	4.3	2.9	0.0	18.6	100.0
Col %	25.0	40.0	23.0	10.1	5.7	15.8	40.0	0.0	61.9	15.7
Total	4	10	100	178	105	19	5	4	21	446
Row %	0.9	2.2	22.4	39.9	23.5	4.3	1.1	0.9	4.7	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 72
Chisquare ....: 137.81772
Chisquare Probability ....: 0.00000

TABLE XVIII

RELATIONSHIP BETWEEN AVERAGE CLASS SIZE AND OPTIMUM CLASSROOM SIZE

Row Variable: Average Class Size
Col Variable: Optimum Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
Under 10	1	0	2	3	0	1	1	0	1	4	13
Row %	7.7	0.0	15.4	23.1	0.0	7.7	7.7	0.0	7.7	30.8	100.0
Col %	11.1	0.0	3.5	6.1	0.0	2.1	1.9	0.0	3.2	4.5	2.9
10	0	1	6	4	5	2	1	0	2	5	26
Row %	0.0	3.8	23.1	15.4	19.2	7.7	3.8	0.0	7.7	19.2	100.0
Col %	0.0	3.2	10.5	8.2	7.8	4.2	1.9	0.0	6.5	5.6	5.8
15	2	5	13	11	13	9	11	1	7	33	105
Row %	1.9	4.8	12.4	10.5	12.4	8.6	10.5	1.0	6.7	31.4	100.0
Col %	22.2	16.1	22.8	22.4	20.3	18.8	21.2	5.9	22.6	37.1	23.5
20	3	10	17	15	22	14	17	3	10	17	128
Row %	2.3	7.8	13.3	11.7	17.2	10.9	13.3	2.3	7.8	13.3	100.0
Col %	33.3	32.3	29.8	30.6	34.4	29.2	32.7	17.6	32.3	19.1	28.6
25	3	13	14	11	20	16	10	6	6	5	104
Row %	2.9	12.5	13.5	10.6	19.2	15.4	9.6	5.8	5.8	4.8	100.0
Col %	33.3	41.9	24.6	22.4	31.3	33.3	19.2	35.3	19.4	5.6	23.3
30	0	2	5	5	4	4	9	6	4	5	44
Row %	0.0	4.5	11.4	11.4	9.1	9.1	20.5	13.6	9.1	11.4	100.0
Col %	0.0	6.5	8.8	10.2	6.3	8.3	17.3	35.3	12.9	5.6	9.8
35	0	0	0	0	0	1	0	0	0	6	7
Row %	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	85.7	100.0
Col %	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	6.7	1.6

TABLE XVIII (continued)

Row Variable: Average Class Size
Col Variable: Optimum Classroom Size

	400	500	600	700	800	900	1000	1100	1200	1200+	Total
40											
Row %	0	0	0	0	0	0	0	0	0	1	1
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.2
40+											
Row %	0	0	0	0	0	1	3	1	1	13	19
Col %	0.0	0.0	0.0	0.0	0.0	5.3	15.8	5.3	5.3	68.4	100.0
	0.0	0.0	0.0	0.0	0.0	2.1	5.8	5.9	3.2	14.6	4.3
Total	9	31	57	49	64	48	52	17	31	89	447
Row %	2.0	6.9	12.8	11.0	14.3	10.7	11.6	3.8	6.9	19.9	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 72
Chisquare ....: 128.00844
Chisquare Probability .....: 0.00005

Respondents seemed satisfied with the size of class they had. On an overall basis, the respondents class size was between 15 and 25, and this appeared to be the size of class they wanted (See Table XIX).

Question V. What is the relationship between the classroom size a respondent feels to be optimum and the average class size he feels to be optimum? No relationship was established (See Table XX).

Question VI. What is the relationship between the overall satisfaction or dissatisfaction with the facilities in which a respondent functions and:

(a) his sex? On an overall basis those dissatisfied equalled those satisfied, however, female respondents tended to be less satisfied than males (See Table XXI).

(b) his years of teaching experience? A slight tendency for more experienced teachers to be more satisfied was noted (See Table XXII).

(c) his total school enrollment? Although, as earlier noted, teachers seemed to approve of class and classroom size as they existed; this approval was not found to extend when compared with school enrollment. Respondents in larger schools were more satisfied with their facilities than were

TABLE XIX

RELATIONSHIP BETWEEN AVERAGE CLASS SIZE AND OPTIMUM CLASS SIZE

Row Variable: Average Class Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
Under 10	3	2	7	0	0	0	0	0	0	12
Row %	25.0	16.7	58.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Col %	75.0	18.2	6.9	0.0	0.0	0.0	0.0	0.0	0.0	2.7
10	0	4	14	7	0	0	0	0	1	26
Row %	0.0	15.4	53.8	26.9	0.0	0.0	0.0	0.0	3.8	100.0
Col %	0.0	36.4	13.9	3.9	0.0	0.0	0.0	0.0	4.5	5.8
15	1	4	50	39	11	1	0	0	0	106
Row %	0.9	3.8	47.2	36.8	10.4	0.9	0.0	0.0	0.0	100.0
Col %	25.0	36.4	49.5	21.8	10.5	5.0	0.0	0.0	0.0	23.5
20	0	1	20	75	29	4	0	0	0	129
Row %	0.0	0.8	15.5	58.1	22.5	3.1	0.0	0.0	0.0	100.0
Col %	0.0	9.1	19.8	41.9	27.6	20.0	0.0	0.0	0.0	28.6
25	0	0	9	43	48	4	1	1	0	106
Row %	0.0	0.0	8.5	40.6	45.3	3.8	0.9	0.9	0.0	100.0
Col %	0.0	0.0	8.9	24.0	45.7	20.0	20.0	25.0	0.0	23.5
30	0	0	1	14	15	11	1	1	1	44
Row %	0.0	0.0	2.3	31.8	34.1	25.0	2.3	2.3	2.3	100.0
Col %	0.0	0.0	1.0	7.8	14.3	55.0	20.0	25.0	4.5	9.8
35	0	0	0	1	2	0	2	2	0	7
Row %	0.0	0.0	0.0	14.3	28.6	0.0	28.6	28.6	0.0	100.0
Col %	0.0	0.0	0.0	0.6	1.9	0.0	40.0	40.0	0.0	1.6

TABLE XIX (continued)

Row Variable: Average Class Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
40	0	0	0	0	0	0	1	0	0	1
Row %	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.2
40+	0	0	0	0	0	0	0	0	20	20
Row %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Col %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.9	4.4
Total	4	11	101	179	105	20	5	4	22	451
Row %	0.9	2.4	22.4	39.7	23.3	4.4	1.1	0.9	4.9	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom ....: 64
Chisquare ....: 903.95654
Chisquare Probability ....: 0.00000

TABLE XX

RELATIONSHIP BETWEEN OPTIMUM CLASSROOM SIZE AND OPTIMUM CLASS SIZE

Row Variable: Optimum Classroom Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
400	1	1	5	1	1	0	0	0	0	9
Row %	11.1	11.1	55.6	11.1	11.1	0.0	0.0	0.0	0.0	100.0
Col %	25.0	9.1	5.1	0.6	1.0	0.0	0.0	0.0	0.0	2.0
500	0	0	9	11	11	0	0	0	0	31
Row %	0.0	0.0	29.0	35.5	35.5	0.0	0.0	0.0	0.0	100.0
Col %	0.0	0.0	9.1	6.2	10.5	0.0	0.0	0.0	0.0	7.0
600	1	1	11	30	12	1	0	0	1	57
Row %	1.8	1.8	19.3	52.6	21.1	1.8	0.0	0.0	1.8	100.0
Col %	25.0	9.1	11.1	16.9	11.4	5.3	0.0	0.0	4.8	12.8
700	0	2	9	24	12	1	0	0	0	48
Row %	0.0	4.2	18.8	50.0	25.0	2.1	0.0	0.0	0.0	100.0
Col %	0.0	18.2	9.1	13.6	11.4	5.3	0.0	0.0	0.0	10.8
800	0	1	11	32	18	2	0	0	0	64
Row %	0.0	1.6	17.2	50.0	28.1	3.1	0.0	0.0	0.0	100.0
Col %	0.0	9.1	11.1	18.1	17.1	10.5	0.0	0.0	0.0	14.4
900	1	0	8	19	16	2	1	0	1	48
Row %	2.1	0.0	16.7	39.6	33.3	4.2	2.1	0.0	2.1	100.0
Col %	25.0	0.0	8.1	10.7	15.2	10.5	20.0	0.0	4.8	10.8
1000	0	0	12	16	15	6	0	0	3	52
Row %	0.0	0.0	23.1	30.8	28.8	11.5	0.0	0.0	5.8	100.0
Col %	0.0	0.0	12.1	9.0	14.3	31.6	0.0	0.0	14.3	11.7

TABLE XX (continued)

Row Variable: Optimum Classroom Size
Col Variable: Optimum Class Size

	Under 10	10	15	20	25	30	35	40	40+	Total
1100	0	0	3	6	3	2	1	1	1	17
Row %	0.0	0.0	17.6	35.3	17.6	11.8	5.9	5.9	5.9	100.0
Col %	0.0	0.0	3.0	3.4	2.9	10.5	20.0	25.0	4.8	3.8
1200	0	1	3	14	8	1	0	1	2	30
Row %	0.0	3.3	10.0	46.7	26.7	3.3	0.0	3.3	6.7	100.0
Col %	0.0	9.1	3.0	7.9	7.6	5.3	0.0	25.0	9.5	6.7
1200+	1	5	28	24	9	4	3	2	13	89
Row %	1.1	5.6	31.5	27.0	10.1	4.5	3.4	2.2	14.6	100.0
Col %	25.0	45.5	28.3	13.6	8.6	21.1	60.0	50.0	61.9	20.0
Total	4	11	99	177	105	19	5	4	21	445
Row %	0.9	2.5	22.2	39.8	23.6	4.3	1.1	0.9	4.7	100.0
Col %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 72
Chisquare 125.04884
Chisquare Probability 0.00000

TABLE XXI

RELATIONSHIP BETWEEN SEX AND OVERALL ATTITUDE

Row Variable: Sex of Respondent
Col Variable: Overall Attitude Toward Adequacy of
                School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
Male	54	70	114	46	284
Row %	19.0	24.6	40.1	16.2	100.0
Col %	55.1	59.8	66.7	70.8	63.0
Female	44	47	57	19	167
Row %	26.3	28.1	34.1	11.4	100.0
Col %	44.9	40.2	33.3	29.2	37.0
Total	98	117	171	65	451
Row %	21.7	25.9	37.9	14.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 3
Chisquare 5.79459
Chisquare Probability 0.12205

TABLE XXII

RELATIONSHIP BETWEEN YEARS OF TEACHING EXPERIENCE
AND OVERALL ATTITUDE

Row Variable: Years of Teaching Experience
Col Variable: Overall Attitude Toward School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
0-2	21	29	34	10	94
Row %	22.3	30.9	36.2	10.6	100.0
Col %	21.4	24.8	19.9	15.2	20.8
3-5	15	34	24	13	86
Row %	17.4	39.5	27.9	15.1	100.0
Col %	15.3	29.1	14.0	19.7	19.0
6-10	22	20	45	12	99
Row %	22.2	20.2	45.5	12.1	100.0
Col %	22.4	17.1	26.3	18.2	21.9
11-14	15	15	20	8	58
Row %	25.9	25.9	34.5	13.8	100.0
Col %	15.3	12.8	11.7	12.1	12.8
15-20	9	7	19	5	40
Row %	22.5	17.5	47.5	12.5	100.0
Col %	9.2	6.0	11.1	7.6	8.8
20+	16	12	29	18	75
Row %	21.3	16.0	38.7	24.0	100.0
Col %	16.3	10.3	17.0	27.3	16.6
Total	98	117	171	66	452
Row %	21.7	25.9	37.8	14.6	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 15
Chisquare 24.59811
Chisquare Probability 0.00000

those from smaller schools (See Table XXIII).

(d) his educational attainment? There seemed to be a general trend toward more satisfaction as educational attainment increased (See Table XXIV).

(e) his primary subject taught? The chisquare probability of .96 seemed to indicate a strong relationship between the respondents primary subject and degree of satisfaction with facilities (See Table XXV).

(f) whether or not he has taught at a school other than the one in which he is presently functioning? Those respondents who had had experience teaching elsewhere seemed not to differ at all from those teachers who had taught in only one building (See Table XXVI).

Other Findings

One school out of the forty was found to employ other than conventional scheduling. The school in question employed what the respondents called a "sliding" schedule. This involved five seventy-minute periods daily, with each class in which the pupil was enrolled meeting only four days a week instead of the customary five.

TABLE XXIII

RELATIONSHIP BETWEEN SCHOOL ENROLLMENT AND OVERALL ATTITUDE

Row Variable: School Enrollment
Col Variable: Overall Attitude Toward School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
Under 100	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0
101-200	2	15	18	8	43
Row %	4.7	34.9	41.9	18.6	100.0
Col %	2.0	12.9	10.5	12.1	9.5
201-300	28	43	61	13	145
Row %	19.3	29.7	42.1	9.0	100.0
Col %	28.6	37.1	35.7	19.7	32.2
301-400	42	35	47	26	150
Row %	28.0	23.3	31.3	12.3	100.0
Col %	42.9	30.2	27.5	39.4	33.3
401-500	19	11	23	7	60
Row %	31.7	18.3	38.3	11.7	100.0
Col %	19.4	9.5	13.5	10.6	13.3
501-600	6	11	17	7	41
Row %	14.6	26.8	41.5	17.1	100.0
Col %	6.1	9.5	9.9	10.6	9.1
601-700	1	1	4	5	11
Row %	9.1	9.1	36.4	45.5	100.0
Col %	1.0	0.9	2.3	7.6	2.4
701-1000	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0
1000+	0	0	1	0	1
Row %	0.0	0.0	100.0	0.0	100.0
Col %	0.0	0.0	0.6	0.0	0.2
Total	98	116	171	66	451
Row %	21.7	25.7	37.9	14.6	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 18
Chisquare 34.84088
Chisquare Probability 0.00000

TABLE XXIV

RELATIONSHIP BETWEEN EDUCATIONAL ATTAINMENT
AND OVERALL ATTITUDE

Row Variable: Educational Attainment of Respondent
Col Variable: Overall Attitude Toward School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
Less than BA/BS	0	1	0	0	1
Row %	0.0	100.0	0.0	0.0	100.0
Col %	0.0	0.9	0.0	0.0	0.2
BA/BS	25	32	40	19	116
Row %	21.6	27.6	34.5	16.4	100.0
Col %	25.5	27.4	23.4	28.8	25.7
BA/BS + 10	12	24	31	5	72
Row %	16.7	33.3	43.1	6.9	100.0
Col %	12.2	20.5	18.1	7.6	15.9
BA/BS + 20	22	21	37	13	93
Row %	23.7	22.6	39.8	14.0	100.0
Col %	22.4	17.9	21.6	19.7	20.6
MA/MS	18	17	30	11	76
Row %	23.7	22.4	39.5	14.5	100.0
Col %	18.4	14.5	17.5	16.7	16.8
More than MA/MS	21	22	33	18	94
Row %	22.3	23.4	35.1	19.1	100.0
Col %	21.4	18.8	19.3	27.3	20.8
Total	98	117	171	66	452
Row %	21.7	25.9	37.8	14.6	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 15
Chisquare 12.37222
Chisquare Probability 0.65067

TABLE XXV

RELATIONSHIP BETWEEN PRIMARY SUBJECT TAUGHT
AND OVERALL ATTITUDE

Row Variable: Primary Subject Taught*
Col Variable: Overall Attitude Toward School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
1	4	1	4	1	10
Row %	40.0	10.0	40.0	10.0	100.0
Col %	4.1	0.9	2.3	1.5	2.2
2	4	9	10	4	27
Row %	14.8	33.3	37.0	14.8	100.0
Col %	4.1	7.7	5.8	6.2	6.0
3	5	5	12	3	25
Row %	20.0	20.0	48.0	12.0	100.0
Col %	5.1	4.3	7.0	4.6	5.5
4	3	5	3	2	13
Row %	23.1	38.5	23.1	15.4	100.0
Col %	3.1	4.3	1.8	3.1	2.9
5	0	0	2	0	2
Row %	0.0	0.0	100.0	0.0	100.0
Col %	0.0	0.0	1.2	0.0	0.4
6	0	1	4	1	6
Row %	0.0	16.7	66.7	16.7	100.0
Col %	0.0	0.9	2.3	1.5	1.3
7	18	21	25	9	73
Row %	24.7	28.8	34.2	12.3	100.0
Col %	18.4	17.9	14.6	13.8	16.2
8	0	0	0	0	0
Row %	0.0	0.0	0.0	0.0	0.0
Col %	0.0	0.0	0.0	0.0	0.0
9	7	6	9	4	26
Row %	26.9	23.1	34.6	15.4	100.0
Col %	7.1	5.1	5.3	6.2	5.8
10	7	4	9	3	23
Row %	30.4	17.4	39.1	13.0	100.0
Col %	7.1	3.4	5.3	4.6	5.1

TABLE XXV (continued)

Row Variable: Primary Subject Taught* Col Variable: Overall Attitude Toward School Facility	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
11	3	5	2	1	11
Row %	27.3	45.5	18.2	9.1	100.0
Col %	3.1	4.3	1.2	1.5	2.4
12	2	5	0	2	9
Row %	22.2	55.6	0.0	22.2	100.0
Col %	2.0	4.3	0.0	3.1	2.0
13	3	4	5	4	16
Row %	18.8	25.0	31.3	25.0	100.0
Col %	3.1	3.4	2.9	6.2	3.5
14	11	14	19	8	52
Row %	21.2	26.9	36.5	15.4	100.0
Col %	11.2	12.0	11.1	12.3	11.5
15	2	3	3	1	9
Row %	22.2	33.3	33.3	11.1	100.0
Col %	2.0	2.6	1.8	1.5	2.0
16	0	1	1	0	2
Row %	0.0	50.0	50.0	0.0	100.0
Col %	0.0	0.9	0.6	0.0	0.4
17	1	1	1	0	3
Row %	33.3	33.3	33.3	0.0	100.0
Col %	1.0	0.9	0.6	0.0	0.7
18	0	1	0	0	1
Row %	0.0	100.0	0.0	0.0	100.0
Col %	0.0	0.9	0.0	0.0	0.2
19	13	10	26	11	60
Row %	21.7	16.7	43.3	18.3	100.0
Col %	13.3	8.5	15.2	16.9	13.3
20	4	2	7	1	14
Row %	28.6	14.3	50.0	7.1	100.0
Col %	4.1	1.7	4.1	1.5	3.1
21	2	7	11	2	22
Row %	9.1	31.8	50.0	9.1	100.0
Col %	2.0	6.0	6.4	3.1	4.9

TABLE XXV (continued)

Row Variable: Primary Subject Taught*					
Col Variable: Overall Attitude Toward School Facility					
	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
22	1	4	2	3	10
Row %	10.0	40.0	20.0	30.0	100.0
Col %	1.0	3.4	1.2	4.6	2.2
23	4	5	7	1	17
Row %	23.5	29.4	41.2	5.9	100.0
Col %	4.1	4.3	4.1	1.5	3.8
24	3	3	6	4	16
Row %	18.8	18.8	37.5	25.0	100.0
Col %	3.1	2.6	3.5	6.2	3.5
25	1	0	1	0	2
Row %	50.0	0.0	50.0	0.0	100.0
Col %	1.0	0.0	0.6	0.0	0.4
26	0	0	2	0	2
Row %	0.0	0.0	100.0	0.0	100.0
Col %	0.0	0.0	1.2	0.0	0.4
Total	98	117	171	65	451
Row %	21.7	25.9	37.9	14.4	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 72
Chisquare 52.10649
Chisquare Probability 0.96280

*Row Variables

1.	Art	14.	Mathematics
2.	Biology	15.	Mechanical Drawing
3.	All Business Courses	16.	Metal Shop
4.	Chemistry	17.	Physics
5.	Clothing	18.	Reading
6.	Driver Education	19.	All Social Sciences
7.	English	20.	Speech/Debate/Dramatics
8.	Foods	21.	Typing
9.	Foreign Language	22.	Vocal Music
10.	General Home Economics	23.	Vocational Agriculture
11.	General Science	24.	Wood Shop
12.	General Shop	25.	Special Education
13.	Instrumental Music	26.	Auto/Power Mechanics

TABLE XXVI

RELATIONSHIP BETWEEN TEACHING EXPERIENCE
ELSEWHERE AND OVERALL ATTITUDE

Row Variable: Teaching Experience at Other School
Col Variable: Overall Attitude Toward School Facility

	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Total
Yes	74	71	118	43	306
Row %	24.2	23.2	38.6	14.1	100.0
Col %	75.5	60.7	69.0	65.2	67.7
No	24	46	53	23	146
Row %	16.4	31.5	36.3	15.8	100.0
Col %	24.5	39.3	31.0	34.8	32.3
Total	98	117	171	66	452
Row %	21.7	25.9	37.8	14.6	100.0
Col %	100.0	100.0	100.0	100.0	100.0

Degrees of Freedom 3
Chisquare 5.69698
Chisquare Probability 0.12732

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

It was the purpose of this study to determine certain biographical and physical situation data concerning the high school teachers of selected small Kansas cities. This information was collected by means of a mail survey. Questionnaires were distributed to the sample along with a stamped, addressed return envelope. One follow-up letter was sent to building administrators to enhance the return percentage. This percentage was 58.1 (462 of 795). The collected data was analyzed through the construction of bivariate frequency tables to demonstrate relationships of interest. Kansas State University Computing Center library program Chisquare was employed on the university's IBM 360/50.

Conclusions

It was determined from the data that:

(1) Most respondents were located in schools with an enrollment between 200-400.

(2) Most respondents functioned with an average class size of from 15-25.

(3) Respondents generally indicated a desire for larger classrooms than those in which they were operating.

(4) Respondents seemed desirous of an average class
size between 15-25.

(5) By combining (2) and (4), it was inferred that
respondents were generally amenable to the average
class size with which they functioned.

(6) Respondents generally favored small high school
enrollments.

(7) Female respondents appeared less satisfied than
males with the physical plant in which they taught.

(8) More experienced (years teaching) respondents
seemed to be more satisfied with facilities than
those less experienced.

(9) Respondents situated in larger schools were found
to be more satisfied with the facilities in which
they functioned than were those in smaller
schools.

(10) Respondents with higher educational attainments
seemed more satisfied with facilities than those
with less schooling.

(11) A chisquare probability of .96 seemed to indicate
that there was a strong relationship between what
a person taught and how satisfied that person
was with the facilities in which he functioned.

Implications

The results of the collected data generally seemed to

imply dissatisfaction among classroom teachers in the smaller cities of Kansas. Criticisms of school facilities and general comments were extremely varied. A large number of respondents complained at length concerning antiquated buildings and lack of equipment. A peculiar trend emerged in the reading of the questionnaires. Those instruments returned almost overwhelmingly favored the small enrollment high school. When compared with complaints about facilities and equipment, this predilection toward smallness seems unreasonable. The retention of numerous small high schools tends to spread resources thin and contribute directly to the older buildings, equipment shortages, and the poor working conditions respondents listed on their questionnaires. Further school district consolidation, for improved facilities at the expense of the small intimate school, might be in order, since Table XXIII seems to indicate respondents from the larger schools are more satisfied with facilities than are teachers in smaller schools.

It is possible to lay hands on a good deal of literature claiming that the classroom teacher's primary concern is with pupil load and classroom size. The diversity of response on items concerning these subjects does not indicate any such majority of sentiment. Chisquare simply does not reveal anything significant. This in itself is significant. It would indicate that perhaps concern should be focused

elsewhere. Perhaps the most valuable data obtained is to be found in the last several tables. These bivariate frequencies indicate the relative satisfaction of respondents with facilities on several criteria. Table XXI relates attitude to the sex of the respondent. Chisquare establishes some relationship and indicates women are less satisfied than are men. Today a majority of female teachers are young. Females tend to teach a few years then leave the profession. Table XXII equates satisfaction and teaching experience. No clear relationship was found; however, if a pattern does exist, it is that the less experience a teacher has the less satisfied he is with school facilities. Generally speaking, the less experienced teachers are the younger ones.

Table XXIV lists satisfaction with facilities according to the respondents educational attainment. Again chisquare indicates some relationship. Although the distribution is somewhat uniform, the tendency is for those with more advanced degrees to be more satisfied. Again generally speaking, more schooled teachers would be those who are older.

The tables cited and discussed above all seem to indicate a definite pattern concerning teacher satisfaction. The older a teacher is, the more likely he is to not object to the school facility in which he functions. This might

be interpreted in two ways. Perhaps as a teacher grows professionally, he can "make do" in any situation. More likely the satisfaction of older teachers is a result of being atrophied and overly complacent. This is more evident when one considers Table XXV. This table indicates that teachers who have moved around are no more satisfied than those in their first building. Presupposing a need for improvement and change in education, the fact that the more educated teachers are more complacent may speak to the universities. If graduate programs really motivated educators, older teachers should be less satisfied with their existing situations and interested in change and improvement. Whenever a comment expressing satisfaction with facilties was encountered, the response was from a more educated respondent with from ten to twelve years experience. If a few such comments from persons with less than five years experience had been encountered, it would tend to negate the foregoing statements. None were found.

The chisquare probability of .96 associated with Table XXV, suggests a real relationship between what a person teaches and his relative satisfaction with facilities. A rough grouping of respondents into discipline areas facilitates an interpretation of the data. Art, music, business, and industrial arts teachers tend to be moderately satisfied with their surroundings. These are fairly traditional

courses and their thrust has not changed greatly over a period of years. Home economics and science teachers lean more toward moderate dissatisfaction. The new emphasis on science and the need for modern up-to-date equipment probably accounts for this attitude. Attitudes of ordinary classroom teachers in mathematics, English, and the social sciences are most interesting. The respondents in these general categories are firmly centered on moderate dissatisfaction with a sizeable percentage indicating strong dissatisfaction with the school facilities in which they function. It is hypothesized that this is the first sign of discontent on the part of more rural educators that has previously manifested itself only in more metropolitan areas. Regardless of subject matter, however, relative satisfaction that was evidenced with existing facilities was firmly centered between moderate and strong dissatisfaction.

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APPENDIX A

SYNTHESIZED TABLE OF CLASS SIZE AND
CLASSROOM SIZE STANDARDS

SYNTHESIZED TABLE OF CLASS SIZE AND CLASSROOM
SIZE STANDARDS[a]

Type of Space	Suggested Optimum Class Size	Suggested Classroom Size	Area per Pupil	Comments
Agriculture	18	1600	89	High ceiling desirable.
Art	25	1100	44	North orientation not necessary if adequate artificial lighting is provided.
Auto Shop	18	1800	100	High ceiling desirable.
Biology	25	900[b]	36	May desire external light source for plant growing.
Chemistry	25	1000[b]	40	
Clothing	24	1000	42	
Foods	24	1100	46	
General Home Ec	24	1500	63	Desirable to generate areas within room by movable partitions.
General Science	30	900[b]	30	
General Shop	20	2000	100	Avoid loft storage in all shops. High ceiling desirable.
Inst. Music	40	1400	35	Tiered risers need 9 sq. ft. per person.
Mech. Drawing	25	900	36	Vocational drafting room needs 300 sq. ft., class of 18 with 45 sq. ft. per pupil.

Type of Space	Suggested Optimum Class Size	Suggested Classroom Size	Area per Pupil	Comments
Metal Shop	20	2200	110	High ceiling desirable.
Physics	25	1000[b]	40	
Print Shop	18	2000	111	
Lang. Arts Lab	30	1000	34	Located near similar rooms.
Special Ed	12	1100	92	Associated storage of 200 sq. ft. needed.
Typing	35	950	27	Electrical outlets at each pupil station.
Chorus	50	1400	28	Tiered risers needed.
Wood Shop	20	1600	80	High ceiling desirable.
General Purpose	30	900	30	e.g., Math, Social Studies, English, Driver Ed., Business Ed., Health, etc.

[a]Adapted from Castaldi's _Creative Planning for Educational Facilities_ and the NCSC _Guide_.

[b]Science rooms should have TV jacks installed and be squarish in design to permit use of peripheral laboratory units. A central science storage room and associated science lecture hall near the lab cluster would be desirable.

APPENDIX B

SYNTHESIZED TABLE OF SCHOOL SIZE

SYNTHESIZED TABLE OF SCHOOL SIZE[a]

Type of School	Minimum Enrollment	Maximum Enrollment
Elementary	200	600-650
Jr. High School	500-600	900-1000
High School	600-700	1200-1500

---

[a]Adapted from Basil Castaldi's _Creative Planning for Educational Facilities._

APPENDIX C

LETTER OF TRANSMITTAL TO BUILDING PRINCIPALS

KSU KANSAS STATE UNIVERSITY *Manhattan, Kansas 66502*

5 May, 1970

Dear Sir:

I am employed by the Center for Extended Services and Studies of the College of Education here at Kansas State   I am presently conducting Master's Report research and would appreciate the participation of your faculty in the collection of data. Since I have been unsuccessful in my search for an individualized mailing list, I am writing this note in hopes of obtaining your assistance. May I ask you to have the enclosed materials distributed to your staff. As you will note, there are stamped, addressed envelopes included; the teachers can complete the form and drop it in the mail with no further imposition on you.

The survey concerns an inquiry into the relationships between the facilities and pupil loads teachers have, what they would like to have, and how these compare to established standards. The questionnaire is not designed to cover physical education teachers or library personnel, so would you exclude these persons from distribution. If you have received extra forms, would you include a note indicating how many in one of the stamped envelopes and drop it in the mail. Results of this forty school state-wide survey should be available in the fall. If you wish an abstract of the findings, please write us at that time, and we will be happy to provide you the material.

Thank you for your invaluable assistance.

Sincerely,

William R. Veitch

APPENDIX D

LETTER OF TRANSMITTAL TO CLASSROOM TEACHERS

KSU **KANSAS STATE UNIVERSITY** *Manhattan, Kansas 66502*

CENTER FOR EXTENDED SERVICES AND STUDIES
COLLEGE OF EDUCATION
HOLTON HALL
PHONE: 532-6766

Dear Educator:

The Kansas State University Center for Extended Services is currently attempting to ascertain teacher attitudes in the State of Kansas on certain aspects of classroom size and enrollment. The project is being conducted by *William R. Veitch*, a College of Education Graduate Assistant, for use in meeting requirements of the Master's Report. From the information collected by the enclosed questionnaire, it is hoped some insight will be gained into what teachers think optimum classroom size and pupil enrollment are. Thus your assistance in this inquiry is requested.

There may be some question as to the determination of what constitutes a primary teaching subject (Part A-V), especially if you teach **six** sections a day with three in one field and three in another. If such a conflict does arise, please address yourself to that subject in which you feel you possess the greater expertise. Feel free to add any comments you wish in the section provided on page two of the questionnaire. All responses will be held in strictest confidence. The questionnaire may be returned to the Center in the enclosed stamped envelope. Thank you for your assistance and cooperation.

Sincerely,

O. K. O'Fallon, Director
Center for Extended Services
and Studies

OKO:lab

Enclosures: Questionnaire
             Envelope

APPENDIX E

QUESTIONNAIRE

SURVEY OF SECONDARY SCHOOL INSTRUCTIONAL SPACES

Please use soft lead pencil. Indicate your answers by marking in solid between the dotted lines associated with your desired response. Part B-X is reserved for any additional remarks or comments concerning the questionnaire.

| PART A | BACKGROUND INFORMATION |

I. Sex:
| Male | Female |
| ==== | ==== |

II. Teaching Experience (years):

0-2	3-5	6-10	11-14	15-20	20+
====	====	====	====	====	====

III. School Enrollment:

under 100	101-200	201-300	301-400	401-500	501-600	601-700	701-1000	1000+
====	====	====	====	====	====	====	====	====

IV. Educational Attainment:

Less than BA/BS	BA/BS	BA/BS +10	BA/BS +20	MA/MS	More than MA/MS
====	====	====	====	====	====

V. Primary Subject Taught (one only):

1.	Art	====	14.	Instrumental Music	====
2.	Biology	====	15.	Math	====
3.	Bookkeeping	====	16.	Mech. Drawing	====
4.	Chemistry	====	17.	Metal Shop	====
5.	Clothing	====	18.	Physics	====
6.	Driver Ed.	====	19.	Reading	====
7.	English	====	20.	Social Science	====
8.	Foods	====	21.	Special Ed.	====
9.	Foreign Lang.	====	22.	Speech/Debate	====
10.	General Business	====	23.	Typing	====
11.	General Home Ec.	====	24.	Vocal Music	====
12.	General Science	====	25.	Wood Shop	====
13.	General Shop	====	26.	Other (specify)_____	

| PART B | EVALUATIVE INFORMATION |

I. Select the answer which most closely approximates the area (in square feet) of the classroom in which you teach your primary subject.

400	500	600	700	800	900	1000	1100	1200	1200+
====	====	====	====	====	====	====	====	====	====

II. Select the answer which most closely approximates the pupil load (average per class) in your primary subject.

under 10	10	15	20	25	30	35	40	40+
====	====	====	====	====	====	====	====	====

III. For your primary subject taught, what do you feel is the optimum size (in square feet) for a classroom?

400___ 500___ 600___ 700___ 800___ 900___ 1000___ 1100___ 1200___ 1200+___

IV. Keeping in mind your response concerning optimum size of classroom on the preceeding question, what do you feel the optimum pupil enrollment (average per class) in that classroom should be?

under
10___ 10___ 15___ 20___ 25___ 30___ 35___ 40___ 40+___

V. According to the level at which you teach (Jr. Hi. or Sr. Hi.), what do you feel is the optimum total enrollment for this type of school?

100___ 200___ 300___ 400___ 500___ 600___ 700___ 800___ 900___ 1000___

VI. Type of Instruction/Scheduling employed in your school (respond as many times as necessary).

Conventional	Non-Graded*	Modular Scheduling*	Flexible Modular Scheduling*	Other (specify)
====	====	====	====	_____

VII. Have you ever taught in a school other than the one in which you are presently located?

Yes___   No___

/III. On an overall basis with all things considered, the physical plant of the school in which I teach is entirely adequate.

Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree
====	====	====	====

IX. List any reasons you may have to justify your response to the preceeding question:_____

_____

_____

_____

_____

X. Comments:_____

_____

_____

*Definitions:
1) Non-Graded: Continuous learning process of grouping pupils according to ability rather than by chronological age and grade level.
2) Modular Scheduling: Use of instructional time periods of varying length or at least of different duration than the conventional 50-55 minute six period day.
3) Flexible Modular Scheduling: Modular scheduling of instructional periods that may change from day to day or week to week.

APPENDIX F

ENROLLMENT PARAMETERS FOR KANSAS HIGH SCHOOLS

ENROLLMENT PARAMETERS FOR KANSAS HIGH SCHOOL[a]

Classification	Enrollment
5A	1656-2581
4A	616-1655
3A	229- 615
2A	110- 228
1A	20- 109

[a]Adapted from the Kansas Educational Directory 1969-70.

These parameters change each year. After all schools enrollments, of September 17th, have been ranked from largest to smallest, the division into classes is made. The top sixteen in enrollment are 5A, the next 32 are 4A, the next 64 are 3A, and the next 128 are 2A. The remaining schools, nearly 200, become 1A.

APPENDIX G

CHISQUARE PROGRAM

KANSAS STATE UNIVERSITY

COMPUTING CENTER

Program Description

CHI SQUARE

Programmed by: Ron Smith

ABSTRACT

Chi Square is a FORTRAN IV program utilizing data recorded by observation to produce bivariate frequency tables and various related calculations including cell percentages, expected cell frequencies, and the Chi Square statistic. Options available to the user include a data listing, the naming of variable categories, and grouping into intervals and reassigning of codes in the input data.

TABLE OF CONTENTS

DISCLAIMER

March 3, 1970

1. <u>OUTPUT FROM THE PROGRAM</u>

Output from the program is printed in sections as follows:

    Section 1: Disclaimer and parameters.
    Section 2: Variables, transformations, and code names.
    Section 3: Table selections.
    Section 4: Data listing (optional).
    Section 5: Tables and statistics.

2. <u>INPUT REQUIREMENTS</u>

The input deck for the job must be arranged as follows:

```
//jobname    JOB  (see standard JOB card format notice)
//JOBLIB     DD   DSNAME=SYS1.USERLIB,DISP=SHR
//stepname   EXEC PGM=CHISQ
//FT03F001   DD   SYSOUT=A,DCB=RECFM=FA
//FT01F001   DD   *
```

PARAMETER CARDS AND DATA DECKS FOR PROBLEMS TO BE RUN.

/*

The data deck must have the following parameter cards in the following order. Cards 1-8 should be included with each set of data to be run, and may be repeated as many times as necessary.

    1.   TITLE CARD (One card, MANDATORY)

       Information punched in cc. 1-80 will be printed on each page of the output. The heading may consist of any material which the user feels is descriptive of the set of data.

    2.   PARM NAMELIST CARD (One or two cards, MANDATORY)

       The parameter card list may contain the following mandatory and optional items:

NVIN	The number of variables to be read in. MANDATORY. Maximum = 250.
NOBS	The number of observations to be read in. MANDATORY. Maximum = 9999.
NVAR	The total number of variables, including both original and transformed variables. OPTIONAL. Maximum = 250. Default = NVIN.
NDSIN	Reference number of the data set containing the data. If unit other than 1 is used, a DD card defining the input data set must be supplied by the user in the JCL. OPTIONAL. Default = 1, the card reader.

NFMT The number of cards required to express the variable input FORMAT for the data, using I-type FORMAT items. OPTIONAL. Maximum is 10. Default = 1.

NSEL The number of table selection cards to be included (see card 6 below), not the actual number of tables. OPTIONAL. The maximum number of tables nust not exceed 1000. Default = 0.

NDSVTN Reference number of the data set containing the variable names, the transformation tables, and the code name tables. If unit other than 1 is used, a DD card defining the input data set must be supplied by the user in the JCL. OPTIONAL. Default = 1, the card reader.

NOTT Number of transformation tables to be included for this set of variables. OPTIONAL. Maximum = 100. Default = 0.

NONT Number of code name tables to be included for this set of variables. OPTIONAL. Maximum = 100. Default = 0.

NDL   If data listing is wanted, value should be 1. If data listing is not wanted, value should be 0. OPTIONAL. Default = 0.

NRCPE If value is 1, row and column percentages and expected cell values will be printed. If value is 0, they will not. OPTIONAL. Default = 1.

NCHI If value is 1, degrees of freedom, Chisquare and Chisquare probability will be printed. If value is 0, they will not. OPTIONAL. Default = 1.

Output from the program will indicate other statistical measures which are currently available as options in the program, and what parameter names to use for them. If you know of a statistic which might be appropriate and useful, and would like to have it added to CHISQ, you may submit documentation about it to the author of the program.

This parameter card should be set up beginning in cc. 1, as follows:

cc. 1
    &&PARM NOBS=____,NVIN=____,(optional),&END

There must be a blank between &&PARM and NOBS. No blanks are permitted in the list. Options need not be included in the list if defaults are to be taken. The &END is also mandatory. If more than one card is required, the list must continue in cc. 2 on succeeding cards.

&&PARM NOBS=55,NVIN=13,NSEL=10,NOTT=3,NONT=4,NDL=1,
NRCPE=0,&END

In the preceding example, there will be 13 original
variables, with none added by transformations.   The
55 observations will be read in on the card reader,
as will the variable names and table cards.   There will
be ten table selection cards, three transformation
tables, and four code name tables.   Output will include
a data listing and degrees of freedom and Chisquare,
but not row and column percentages and expected cell
values.

3.   VARIABLE NAME CARDS   (MANDATORY)

cc.			
1-5	(mandatory)	Variable number (1-999)	
6-9	(mandatory)	Blank	
10-12	(mandatory)	Minimum code for variable (after transformations are performed)	
13-15	(mandatory)	Maximum code for variable (after transformations are performed)	
16-55	(mandatory)	Name of variable	
59-61	(optional)	Must be blank unless this variable is being created from a previously read-in variable. If this variable is being so created, cc. 59-61 must contain the variable number of the variable whose values are to be copied to create the new variable. The first NVIN Variable Name Cards must have 0 or blank in these columns.	
62-64	(optional)	Number of the transformation table specifying the transformation to be done on this variable. If the variable is not to be transformed, these columns should contain 0 or blank.	
65-67	(optional)	Number of the code name table specifying the names corresponding to the values of this variable. If names are not to be assigned, these columns should contain 0 or blank.	

The number of Variable Name Cards must be the same as
the value of NVAR on the Parm Namelist Card, or the
value of NVIN if NVAR is not used. The first NVIN
Variable Name Cards represent the values to be read in
from the input data records. The values corresponding
to variable NVIN+1, . . .,NVAR, must be constructed
either by using the initializing feature (i.e.,
specifying a variable number in cols. 59-61) or by
adding statements in the IDATA subroutine to give it
initial values.

4.   TRANSFORMATION TABLE CARDS (OPTIONAL)

Card 1, cc.	1-3	Table number (1-100)		
	4-6	Number of entries in the table, i.e., the number of old intervals to which new values are to be given.		
	10-12	Minimum value of old interval	}	1st
	13-15	Maximum value of old interval		entry
	16-18	New code value		
	. . .			
	64-66	Minimum value of old interval	}	7th
	67-69	Maximum value of old interval		entry
	70-72	New code value		
Card N, cc.	10-12	Minimum value of old interval	}	$7 \cdot (n-1)$
	13-15	Maximum value of old interval		+1st
	16-18	New code value		entry
	. .			
	64-66	Minimum value of old interval	}	7·nth
	67-69	Maximum value of old interval		entry
	70-72	New code value		

The number of sets of Transformation Table Cards must
be the same as the value of NOTT on the Parm Namelist
Card. Each number which appears in cc. 62-64 of a
Variable Name Card must also appear in cc. 1-3 of a
Transformation Table Card.
     An additional restriction is that the total number
of entries in all of the tables not exceed 1000.

5.   CODE NAME TABLE CARDS (OPTIONAL)

If any variables are to have individual codes named, a
code name table must be set up for it. More than one
variable may use the same code name table.

```
Card 1, cc.    1-3    Table number (1-100)
               4-6    Number of entries in the table,
                      i.e., the number of code names
                      specified.
               10-13  1st name
               14-17  2nd name
               18-21  3rd name
                 .
                 .
                 .
               66-69  15th name

Card N, cc.    10-13  15·(n-1) + 1st name
                 .
                 .
                 .
               66-69  15·nth name
```

The number of sets of Code Name Table Cards must be the same as the value of NONT on the Parm Namelist Card. Each number which appears in cc. 65-67 of a Variable Name Card must also appear in cc. 1-3 of a Code Name Table Card.

An additional restriction is that the total number of entries in all of the tables not exceed 1000.

6. TABLE SELECTION CARDS (OPTIONAL)

The table Selection Cards indicate which variables are to be paired to form tables. If only one table is desired, the row and column variables are indicated in cc. 1-5 and 11-15, with cc. 6-10 and 16-20 left blank. For each row variable indicated in cc. 1-5 and 6-10 a table will be constructed with each of the column variables identified in cc. 11-15 and 16-20. The tables may be built irrespective of other variables (cc. 21-40 left blank); or either one or two other variables may be controlled (that is, required to have a specified value), as the following itemization indicates. There will be one table for each code of the control variable.

```
cc.   1-5    (mandatory)   First (or only) row variable
                           number
      6-10   (optional)    Last row variable number
      11-15  (mandatory)   First (or only) column variable
                           number
      16-20  (optional)    Last column variable number
      21-24  (optional)    First (or only) control variable
                           number
```

	cc.	25-27	(optional)	Minimum code for first control variable
		28-30	(optional)	Maximum code for first control variable
		31-34	(optional)	Second control variable number
		35-37	(optional)	Minimum code for second control variable
		38-40	(optional)	Maximum code for second control variable

7. VARIABLE FORMAT (MANDATORY)

Cards containing variable I-type FORMAT follow next. Begin with opening parenthesis in cc. 1, continue with FORMAT for up to ten cards, and then close parenthesis. You may use cc. 1-80. Remember that NFMT must equal the number of FORMAT cards if more than one card is used.

8. DATA CARDS

Following the parameter cards described above will be the user's data.

3. TRANSFORMATIONS

A special subroutine must be provided by the user if he wishes to create new variables or perform any transformations not provided for by the Transformation Table Cards. Changes in the JCL cards and data cards are as follows:

```
//jobname   JOB    (see standard JOB card format notice)
//stepname  EXEC FTGCLGKS
//FORT.SYSIN DD *
      SUBROUTINE IDATA (NO,NVIN,X,NDSIN,NFMT)
      INTEGER X(1)
      DIMENSION FMT (200)
      IF (NO.GT.1) GO TO 1
      NFMT=20*NFMT
      READ (1,3)(FMT(I),I=1,NFMT)
      WRITE (3,2) (FMT(I),I=1,NFMT)
    1 READ (NDSIN,FMT) (X(I),I=1,NVIN)
C     YOUR STANDARD FORTRAN IV STATEMENTS FOR THE TRANSFORMATIONS
C     GO IN HERE.     X IS THE VARIABLE NAME FOR THE VARIABLES
C     TO BE TRANSFORMED.  YOU MUST SUPPLY THE CORRECT SUBSCRIPTS.
      RETURN
    2 FORMAT('-FORMAT ',20A4/(8X,20A4))
    3 FORMAT(20A4)
      END
/*                              (more cards on next page)
```

```
//LKED.LIB DD DSNAME=SYS1.USERLIB,DISP=SHR
//LKED.SYSIN DD *
       INCLUDE LIB(CHISQ)
       ENTRY MAIN
/*
//GO.SYSIN  DD *
```

PARAMETER CARDS AND DATA DECKS FOR PROBLEMS TO BE RUN.

```
/*
```

4. PROGRAMMING HELP

Any user needing help in learning how to set up the JCL, formats, or transformations should contact the Program Librarian in Room 128, Cardwell Hall.

APPENDIX H

FOLLOW-UP LETTERS

KSU KANSAS STATE UNIVERSITY *Manhattan, Kansas 66502*

CENTER FOR EXTENDED SERVICES AND STUDIES
COLLEGE OF EDUCATION
19 May, 1970   HOLTON HALL
PHONE: 532-6766

Dear Sir;

Recently we mailed to your school a packet of question-
naires with the request that they be distributed to your faculty.
If for some reason the packet has been lost in the mails and
you have not received it, would you be so kind as to drop us
a note to that effect.

If you have received the questionnaires and the oppor-
tunity presents itself, would you mention them to your fac-
ulty. We are hoping by this one follow-up reminder to en-
hance our percentage of returns.

Thank you for your help.

William R. Veitch

KSU **KANSAS STATE UNIVERSITY** *Manhattan, Kansas 66502*

19 May, 1970

Dear Sir:

Response to the recent packet of questionnaires we sent to your school has been exceedingly good. However, if the opportunity present itself, would you mention the questionnaires and their return to your faculty. We are hoping by this one reminder to enhance our percentage of returns.

Thank you for your continued assistance.

Sincerely,

William R. Veitch

CLASSROOM SIZE AND ENROLLMENT IN THE HIGH SCHOOLS
OF SELECTED SMALL KANSAS CITIES

by

WILLIAM ROBERT VEITCH

B.A., College of Emporia, 1964

_____

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education
Department of Administration and Foundations

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1970

In order to determine teacher attitudes about class load, room size, and school enrollment in relation to the facility in which they teach, a questionnaire was mailed to forty high schools in smaller cities in Kansas. It was intended that all faculty members, except physical education and library personnel, would fill out the instrument and return it in the stamped, addressed envelope provided. Return percentage was 58.1 per cent (462 of 795). The instrument was designed to determine biographical data concerning the respondent (sex, teaching experience, school enrollment, educational attainment, and primary subject taught); his existing class load and room size; and that class load, room size and enrollment he felt to be optimum. Space was also provided for comments. The collected data was analyzed through the construction of bivariate frequency tables to demonstrate relationships of interest. Kansas State University Computing Center canned library program chisquare was employed on the university's IBM 360/50.

It was concluded from the collected data that:

(1) Most respondents were located in schools with an enrollment between 200-400.

(2) Most respondents functioned with an average class size of from 15-25.

(3) Respondents generally indicated a desire for larger classrooms than those in which they were operating.

(4) Respondents seemed desirous of an average class size of from 15-25.

(5) By combining (2) and (4), it was inferred that respondents were generally amenable to the average class size with which they functioned.

(6) Respondents generally favored small high school enrollments.

(7) Female respondents appeared less satisfied than males with the physical plant in which they taught.

(8) More experienced (years teaching) respondents seemed to be more satisfied with facilities than those less experienced.

(9) Respondents with higher educational attainments seemed more satisfied with facilities than those with less schooling.

(10) A chisquare probability of .96 seemed to indicate that there was a strong relationship between what a person taught and how satisfied that person was with the facilities in which he functioned.

A major implication inferred from the collected data concerns many complaints listed on the questionnaires concerning class size, room size, facilities, equipment shortage, and working conditions, indicating that the schools were too small to adequately do the job they were supposed to do.

Paradoxically, respondents indicated they believed high schools should be small in enrollment. This implied an unrealistic unwillingness to make some sacrifice of the small intimate high school, to achieve better facilities and working conditions, cost-effectiveness, and a better learning situation through further district consolidation.

Chisquare did not reveal any significance in relation to classroom size or pupil load as being of primary importance to respondents. This indicated that perhaps concern should be focused elsewhere. Comparisons of teaching experience, educational attainment, and sex of respondent to overall satisfaction with school facilities seemed to indicate that older teachers had more satisfaction with the school in which they functioned. Younger teachers were less enthused with their situations. A comparison of subject taught and satisfaction (conclusion 10) indicated that this dissatisfaction came primarily from general classroom teachers more than from instructors of enrichment, skill, or occupational disciplines. Regardless of subject matter, however, relative satisfaction that was evidenced with existing facilities was firmly centered between moderate and strong dissatisfaction.