EXTRACURRICULAR AND NONTEACHING DUTIES OF INDUSTRIAL-ARTS TEACHERS IN WISCONSIN

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EXTRA-CURRICULAR AND NON-TEACHING DUTIES OF INDUSTRIAL-ARTS TEACHERS IN WISCONSIN

Chapter I

INTRODUCTION

Intelligent leadership of extra-curricular activities in the high schools is of such great importance to the total educational program that administrators should give careful consideration to the bases for assignment of teachers as activity sponsors and supervisors.

Jordan (35) has stated that,

> Extra-curricular activities are those voluntary tasks which are carried by pupils in addition to the regular classroom requirements, either after regular school hours, or at a time within the program specially designated for such purposes, and may be in effect semi-curricular. (35, p. 2)

The relationship between the curriculum and extra-curricular activities established for this study is reflected by Grayson (28) who advised that,

> In educational parlance the term curriculum is used generally to designate the total offering of the formal work of the school. Gradually curriculum has come to mean the complete description of work to be offered, with objectives and methods of learning and teaching... The club program, the assembly, student council and the homeroom are regarded as extracurriculum activities. (28, p. 275-276)

Activities which teachers are expected to supervise and/or attend, such as athletic events, musical programs, and play productions are considered as non-teaching duties.

Statement of the problem

The purpose of this study is to survey the extent to which industrial-arts teachers in Wisconsin are assuming their responsibilities for extra-curricular and non-teaching duties. The specific objective is to find answers to the following questions:

1. What are the extra-curricular and non-teaching duties of industrial-arts teachers in Wisconsin?
2. What special qualifications do teachers of industrial arts in Wisconsin have for performing the extra-curricular and non-teaching duties assigned to them?
3. How much time do teachers of industrial arts in Wisconsin spend in teaching and how much time do they spend in performing extra-curricular and non-teaching duties?
4. How much time are industrial-arts teachers in Wisconsin expected to work at school on Saturdays or evenings without reimbursement?
5. What is the method by which industrial-arts teachers in Wisconsin are compensated for extra-curricular work performed during out-of-school hours?

Other related questions for which answers are sought are:

1. What is the educational background of industrial-arts teachers in Wisconsin in terms of degrees

earned at colleges and universities?

2. What is the number of different daily preparations required of industrial-arts teachers in Wisconsin?
3. What average daily enrollment do industrial-arts teachers have in unit, limited general, and comprehensive general shop classes and those classes in which other subjects are taught?
4. How much time do teachers of industrial arts in Wisconsin require for preparing and organizing materials of instruction?
5. How much time do teachers of industrial arts in Wisconsin spend in the care and maintenance of materials and equipment?
6. How many industrial-arts teachers in Wisconsin are responsible for ordering, storing, issuing, and accounting for supplies and equipment to other industrial-arts teachers in their respective schools and/or school systems?
7. How many free periods per day do teachers of industrial arts in Wisconsin have for class preparations?
8. How many industrial-arts teachers in Wisconsin are the head of a department?

Justification of the study

Selvidge (54) has stated that,

> In considering the schedule of the industrial-arts shop teacher in comparison with the schedule of other teachers, the character of his duties and responsibilities should be taken into account... (54, p. 142)

The amount of time required for such duties as the maintenance of machines and equipment varies considerably among industrial-arts teachers. This depends on such factors as the quality and condition of machines and equipment used, the type of students taught, and the kind of shop organization used in the presentation of instruction.

Administrative decisions concerning extra-curricular and non-teaching duty assignments should be based on evidence of teaching load, special qualifications and interest expressed in the specific activities considered, and the quality of teaching done in the classroom.

It is hoped that the study will be of value to the following groups: 1) School administrative officers, by showing them what duties the industrial-arts teachers are performing in Wisconsin high schools; 2) teacher-training personnel, by indicating what studies should be offered and what experiences in extra-curricular activities should be provided; 3) prospective industrial-arts teachers, in helping them prepare for their profession.

Improvement of the industrial-arts programs in Wisconsin can be accomplished through a fair distribution of duties which will enable teachers to keep abreast of rapidly advancing technical and scientific developments.

Procedure used in collecting the data

The first step in the collection of data for this study was the development of a questionnaire for industrial-arts teachers of Wisconsin. Several excellent suggestions for developing the questionnaire and collecting the data were obtained from a similar study by Thaw (60) who surveyed the teaching load of science teachers in Oregon.

Approval of the study was then obtained from the Wisconsin State Department of Public Instruction. The proposed questionnaire and a letter of transmittal to principals was submitted to the Oregon State College School of Education for review and criticism by members of the writer's graduate committee. Upon receipt of constructive criticisms and suggestions from the committee, the questionnaire was revised and then sent to thirty industrial-arts teachers for trial purposes.

After a final revision the questionnaire was mimeographed and the letter to principals was lithographed. Copies of the questionnaire and the letter to principals

are included in the Appendix.

The procedure for obtaining the sample was as follows: 1) An Official School Directory for Wisconsin was obtained from the State Department of Public Instruction; 2) high schools were selected which offered instruction in industrial arts and were assigned a number in the directory; 3) a packet was prepared and mailed to each school selected. It contained a letter to the principal, a set of questionnaires for industrial-arts teachers, and a stamped envelope addressed to the writer to be used for returning the completed questionnaires. This envelope was numbered in order to identify the school when the questionnaires were returned.

The letter to the principal briefly stated the purpose of the study and requested assistance in distributing the questionnaires to industrial-arts teachers. The principal was asked to have the teachers return the completed questionnaires to him for bulk mailing to the writer.

A questionnaire was sent to each of the 682 industrial-arts teachers listed in the Official School Directory for Wisconsin. At the time the analysis of the data began, 407 or sixty per cent of the questionnaires were received in completed form. Any attempt at follow-up was deemed inadvisable because of the condition of anonymity of individual teachers. The percentage of returns, however, appears to be favorable.

Treatment of the data

The completed questionnaires were arranged according to the size of the communities in which the participating teachers taught, were assigned numbers, and then filed in folders. Data were compiled from each section of the questionnaire on columnar ruled paper and identified by number. The data were then tabulated and percentages of factors were determined for the items listed on the questionnaire.

Limitations

This study of the extra-curricular and non-teaching duties of industrial-arts teachers in Wisconsin was delimited by choice to four designated phases of student activities in Wisconsin high schools. These were: 1) subject clubs; 2) hobby clubs; 3) organizations related to school management; 4) school activities which teachers are required to supervise and/or attend after school hours. For the purpose of this study, any responsibility assigned by the principal beyond the periods of regular teaching was to be considered as extra-curricular.

Clement (14) advised that,

> Certain limitations always accompany this sort of inquiry or study. For example, it is never possible to procure a complete picture of actual practices in vogue; it is never possible to determine through the questionnaire procedure which practices are being most effectively carried out; it is difficult to say whether a school having

> twice as many activities as another is therefore twice as good; and it is difficult through letter writing to detect the relationship existing between classroom and non-classroom activities of the school. (14, p. 280)

Upon review of the returned questionnaires, it was deemed inadvisable to attempt to form a comparison between the industrial-arts teachers and teachers of subjects other than industrial arts in Wisconsin. It was recognized that the sample obtained from teachers of subjects other than industrial arts was too small to make an adequate comparison because of the relatively small sample from teachers of any specific subject.

Chapter II

REVIEW OF LITERATURE

Several writers have discussed the status and teaching conditions of industrial-arts teachers, in general, but very few studies have been made which considered the extra-curricular and non-teaching duties of industrial-arts teachers. Most of the treatises which dealt with industrial arts in the various states to the present are based upon research which is recorded in the form of unpublished theses in graduate schools of colleges and universities of the United States. Research findings which have a bearing on the extent to which industrial-arts teachers are assuming their responsibilities for extra-curricular and non-teaching duties appear under the following headings: 1) Educational background of industrial-arts teachers in terms of degrees earned at colleges and universities; 2) major and minor fields of teaching; 3) extra-curricular and non-teaching duties of industrial-arts teachers; 4) time spent by teachers of industrial arts in teaching and in performing extra-curricular and non-teaching duties; 5) the number of different daily preparations required of industrial-arts teachers; 6) enrollments which industrial-arts teachers have in shop classes and those classes in which other subjects are taught; 7) time required by industrial-arts teachers

for preparing and organizing materials of instruction; 8) time spent by industrial-arts teachers in the care and maintenance of materials and equipment.

Educational background of industrial-arts teachers in terms of degrees earned at colleges and universities

Since preparation is one of the most important factors contributing to the success of a teacher, this item is included in a great number of studies. Numerous investigations in the various states have shown that a baccalaureate degree is well set up as a standard minimum requirement for industrial-arts teachers.

Smith (55) made a study of 110 Minnesota industrial-arts teachers in 1923 and found that eight had completed four years of college work. He wrote that three-fourths of the men had two years or more of training beyond the high school, which was largely professional, and that most of the others had what seemed to be equivalent training. This study was the basis for the first detailed report on the status and teaching conditions of industrial-arts teachers.

Strickler (56) investigated the training and experience of 480 industrial-arts teachers throughout the nation. He reported in 1927 that sixty-two one hundredths of one per cent of the 480 teachers had the Ph. D. degree, 3.33 per cent had the Master's degree, 29.38 per cent had the

Bachelor's degree, and 31.25 per cent had diplomas.

Diamond (20), in a study of the teachers of industrial arts and industrial education in the State of Michigan, advised in 1927 that,

> The preparation of shop teachers is made up of two different types of training. The first includes the knowledge and skills required in the trade or craft which has become their subject. The second includes the development of a breadth of view regarding the arts and sciences. It also includes the building up of an appreciation and a working knowledge of the principles and methods generally accepted in their profession. (20, p. 11)

Diamond wrote that the teacher frequently acquires the first type of training in the shop or factory and its real value is, therefore, rarely expressed in the terms usually accepted in school circles. He reported that over 83 per cent of the teachers included in the study, from the small communities as well as the larger communities, had a Life Certificate or a degree or both, and that almost 29 per cent of them had a degree from some accredited institution.

Davis (18) made a study of 169 industrial education teachers in the secondary schools of Kansas and stated in 1929 that,

> One-hundred and fifty, or nearly 89 per cent, have earned the Bachelor's or a higher degree; five have completed work for a Master's degree; nineteen, or about 11 per cent, are without degrees. (18, p. 28)

Larson (36) reported in 1929 that 52 per cent of the industrial-arts teachers of Nebraska had the Bachelor's

degree.

Livingston (38) made a study of the preparation of industrial-arts teachers of Kansas and wrote in 1930 that,

> A little more than 10 per cent of the teachers reporting had no baccalaureate degree. Only three per cent had the Master's degree in 1929 but more than 30 per cent were doing advanced study. (38, p. 85)

Carlile (12) surveyed the qualifications of teachers in the industrial-arts program of Arizona and reported in 1931 that approximately 70 per cent of the respondents had the Bachelor's degree and an additional 25 per cent had more than two years of college training.

For Illinois, Bolle (7) stated in 1932 that 289, or 60.9 per cent of the teachers, had degrees. Twenty-eight teachers, or 5.9 per cent of the total number reporting, had Master's degrees while only 13, or 2.7 per cent, had taken no work beyond the high school.

Pease (49) made an analysis of the training and experience of 98 industrial-arts leaders in 1932. His study revealed that 90.78 per cent held Bachelor's degrees, 56.1 per cent had a Master's degree and 14 per cent of this select group held a Doctor's degree (Ph. D.).

Carter (13) found in 1933 that 7.4 per cent of the industrial-arts teachers of Illinois high schools held Master's degrees and 52.2 per cent held Bachelor's degrees.

Schreiner (53) made a survey of 156 industrial-arts teachers of Nebraska in 1938 and found that 16.66 per cent held a Master's degree, 76.34 per cent had a Bachelor's degree, and the remaining 7 per cent had more than two years of college preparation.

Heidenreich (32), making a survey in 1942 of the extra-curricular activities of industrial-arts teachers of Arizona high schools, reported that 64.3 per cent of them had baccalaureate degrees and 30.3 per cent held Master's degrees.

Anderson (3), studying the professional personnel of Wisconsin, wrote in 1948 that 7.4 per cent of the industrial-arts teachers in Wisconsin had less than the baccalaureate degree, approximately one-fourth of the industrial-arts teachers held a Bachelor's degree and about one-half, or 45.2 per cent, had taken some work beyond this first degree. He stated that approximately 14 per cent of the industrial-arts teachers held the Master's degree and only 8.2 per cent had taken work beyond the Master's degree. Anderson pointed out that it was not considered important in Wisconsin for secondary school teachers to take professional training beyond the Master's degree.

Major and minor fields of teaching

The large number of industrial-arts teachers in the public schools who have not made special preparation for

teaching industrial arts has claimed the attention of many investigators. Evidence of professional preparation is indicated in the number of teachers who major or minor in the field in which they later teach.

Davis and Livingston made separate studies of the industrial-arts teachers of Kansas in the years 1929 and 1930 respectively. Davis (18) found that 107 teachers, or 71 per cent of those having degrees, had majors or minors in industrial arts. Livingston (38) reported that only 46 per cent of the men who were teaching industrial arts had majored in industrial arts in their college course.

The findings of Carlile (12) for Arizona in 1931 show a close correlation with those of Livingston who considered preparation in the major field. Carlile reported that considerably less than half of the industrial-arts teachers (42.86 per cent) had majored in industrial arts.

Carter (13) stated in 1931 that the majority of industrial-arts teachers of Illinois had evidently planned while yet in college to teach industrial arts, for 70.4 per cent of them had selected it as their major subject.

Pease (49) found in 1932 that practically all of the 98 industrial-arts leaders which he had surveyed had majored in one of three divisions, industrial arts, education and psychology, and engineering.

Cuffel (16) reported that approximately three-fourths

of the shop teachers of Iowa who were teaching in 1937 had either a major or a minor in industrial arts education. In relating the types of work taken in the major field, Cuffel stated that,

> Industrial arts education, agriculture, education, physical education, social science, economics, mathematics, and history rank highest in frequency in the order named... (16, p. 40)

Schreiner (53) reported that one-hundred and one, or 65 per cent, of the industrial-arts secondary school teachers of Nebraska had either majors or minors in industrial arts education. He also wrote that approximately 65 per cent of the industrial-arts teachers were teaching in their major fields in 1938.

Heidenreich (32) stated that 65 per cent of the high school industrial-arts teachers of Arizona in 1941 had majored in industrial arts. This represents an increase of 22.14 per cent in the number of teachers who had majored in industrial arts when Heidenreich's findings are compared with those of Carlile for Arizona in 1931.

Results of studies concerned with the major and minor fields of teaching are indicated in Table 1, page 17.

Extra-curricular and non-teaching duties of industrial-arts teachers

Davis (18) reported in 1929 that out of a total of 169 industrial-education teachers of Kansas there were only

28 persons doing extra-curricular work in which some form of athletic coaching was not included. He stated that, even if coaching of athletic teams is included in the extra-curricular load, he found only 82 men, or approximately 50 per cent of the group, who had any cooperative duties.

In considering the duties which teachers of industrial subjects of Nebraska had been called upon to discharge, in addition to their regular teaching loads, Larson (36) reported in 1929 that it was quite possible that a number of the teachers who listed athletics as an extra class-room duty were in reality hired as coaches. He stated that,

> Teachers in the smaller schools are called upon to do more of the extra-curricular things than those in the larger schools largely because men are few in the staffs. (36, p. 17)

Livingston (38) reported for Kansas in 1930 that the chances were quite strong that the industrial-arts teacher would be assigned extra duty in athletics, Hi-Y, or a class to sponsor. He stated that the teacher of industrial arts is assuming his responsibility in the expanding program of extra-curricular activities.

Lynn (39) wrote in 1930 that school clubs and Boy Scouts were the most popular of the marginal activities in Iowa and were legitimate social services in the community. He stated that,

> Medians show that most teachers were engaged in more than one activity... The median number of

school club activities for the total group is only 1.5. (39, p. 82)

Table 1. Major and Minor Fields of Teaching.

Study and date	Major in industrial arts %	Major or minor in industrial arts %
Davis (18) 1929- Kansas		71
Livingston (38) 1930- Kansas	46	
Carlile (12) 1931- Arizona	42.86	
Carter (13) 1931- Illinois	70.4	
Cuffel (16) 1937- Iowa		75
Schreiner (53) 1938- Nebraska		65
Heidenreich (32) 1941- Arizona	65	

Carlile (12) reported for Arizona in 1931 that a little more than half of the teachers were actively engaged in sponsoring some organization. He wrote that athletic work was apparently the only activity that found more than ordinary recurrence. There were 13 teachers connected with athletic work but only four instances in which they were hired and paid for their ability to coach the major sports as a part of the payroll job.

For Illinois, Bolle (7) found in 1932 that some teachers had participated in as many as four activities while a comparatively small number, 27.5 per cent of the entire group, engaged in no extra-curricular activity. He stated that,

> Athletics is ... the most popular activity. Over 50 per cent of the teachers engaged in extra-curricular activities are assisting with some form or another of athletic work. We note that as the school becomes larger, fewer men are engaged in coaching. Undoubtedly in the larger cities such work is taken care of through the athletic department. (7, p. 47)

Carter (13) reported for Illinois that 64 different extra-curricular activities and other duties of teachers were listed with a 2406 frequency for 1932-33 as compared to 63 with a 2578 frequency for 1931-32 and 58 with a 2373 frequency for 1930-31. Of the 457 industrial-arts teachers reporting, 221 had homeroom assignments. The median number of activities per teacher was 5.2 in 1932-33; 5.4 in 1931-32; and 5.5 in 1930-31.

Briggs (9) reported in 1937 on a study which was made to ascertain the feeling on the part of school men relative to extra-curricular activities in relation to the secondary schools. He stated that,

> 1) Approximately three-fourths (76 per cent) of the high-school teachers of the nation participate in guiding and directing extra-class activities in high school. 2) Those high-school teachers guiding and directing extra-class activities are rated among the best one-third of all high-school teachers. (9, p. 696)

Cuffel (16) wrote in 1937 that industrial education teachers of Iowa were required to take part in a variety of extra-curricular activities. The duties which teachers were most frequently called upon to perform were hall duty, coaching, and class sponsor in respective order.

De Selle (19) Stated in 1937 for Oregon that industrial-arts teachers had a natural tendency for the sponsoring of activities that are directly related to industrial arts. He advised that the largest number of teachers sponsored the Boy Scouts, a social service to boys. A total of 20, or 31.7 per cent of the industrial-arts instructors responding, reported having sponsored this organization within the last five years. The activity receiving the next largest number of sponsors was dramatics, with 11, or 17.4 per cent of the instructors participating.

Schreiner (53) wrote in 1938 that the teachers of industrial-arts education of Nebraska listed 19 different activities in which they were required to participate. The four most frequently mentioned activities were homeroom sponsor, athletic coach, club sponsor, and class sponsor.

In reporting on the status of industrial-arts teachers of Kansas, Jefferies (33) stated in 1940 that the average industrial-arts teacher taught either general science or mathematics and was a coach or class sponsor. He found that the teachers listed 24 activities in which they were

required to participate. This represents five activities more than the number recorded by Schreiner for Nebraska in 1938.

Heidenreich (32) found in 1942 that 71 per cent of the industrial-arts teachers of Arizona directed or supervised an extra-curricular activity. This shows an increase of approximately 25 per cent since Carlile made his study in 1931. Fourteen teachers, representing 25 per cent, indicated that they had no responsibility for extra-curricular activities or organized groups. Heidenreich wrote that each teacher in the State of Arizona had an average of 1.33 extra-curricular responsibilities. The academic teachers reported that they sponsored 118 organized clubs and the industrial-arts teachers indicated that they were responsible for 27 clubs.

Anderson (3) reported for Wisconsin in 1948 that extra-curricular activities were assigned to all teachers in a majority of the schools. These extra-curricular activities were not confined to the regular school day in most high schools, but were scheduled for the afternoon after school, evenings, and Saturdays. Extra-curricular responsibilities were included as a part of the regular teaching assignment in nearly two-thirds of the high schools.

Busby (11) made a study of the teaching and extra-curricular duties of industrial-arts teachers. He stated

for Iowa in 1949 that there was a total of 29 different extra-curricular activities listed as both seldom and frequently performed which had been checked by teacher respondents for a total of 236 times.

In summarizing the reports on extra-curricular and non-teaching duties, we find a steadily increasing number of industrial-arts teachers assuming their responsibility for such activities. Jefferies (33) stated in 1940 that the average industrial-arts teacher of Kansas was a coach or class sponsor; Heidenreich (32) reported in 1942 that 71 per cent of the industrial-arts teachers of Arizona directed or supervised an extra-curricular activity; and Anderson (3) wrote in 1948 that extra-curricular activities were assigned to all teachers in a majority of the Wisconsin schools. The most frequently sponsored activities were athletics, class sponsor, Boy Scouts, and club sponsor.

Time spent by teachers of industrial arts in teaching and in performing extra-curricular and non-teaching duties

Smith (55) reported in 1924 for Minnesota that the teaching load of the men was much heavier than was desirable for effective work. He advised that the extra-curricular activities had created a need on the part of the instructors for great diversity of preparation and particularly for

training in coaching and managing athletic teams.

Davis (18) wrote in 1929 for Kansas that a conservative estimate of the amount of time which a teacher should expect to give to extra-curricular work is 20 to 25 per cent of his total time devoted to school work.

Larson (36) stated for Nebraska in 1929 that,

> The industrial teachers spend, on the average, 24.5 hours in the class room or shop each week. In addition they spend, on an average, 7.6 hours weekly on extra-classroom duties. Since this represents the average situation it includes many academic subjects and necessitates considerable preparation. With this load little can be done by way of lesson planning and shop upkeep, especially by teachers who must coach in addition because they are away from town on week-end trips and the daily practice denies them the opportunity of being in the shop after school hours. (36, p. 87)

Carlile (12) reported for Arizona in 1931 that the industrial-arts teachers had an average teaching load of 27.5 hours per week with an average of 16 students per class. This load, which closely approached a standard full time teaching schedule, a pro-rata share of the special duties, a sponsorship of a department club, shop maintenance duties, and the necessary preparations and planning for teaching, gave the average teacher all that could be done well. Carlile found that an additional seven hours weekly were required for the industrial-arts teachers to perform the extra-curricular and special school duties.

Bolle (7) wrote in 1932 for Illinois that industrial-

arts teachers spent a median of 176 minutes (2.9 hours) per week in performing extra-curricular duties. Twenty-five per cent of the teachers spent 83 minutes (1.4 hours) or less per week, while 25 per cent spent 381 minutes (6.4 hours) or more per week.

Carter (13) stated for Illinois in 1933 that more industrial-arts teachers were teaching 20 to 23 hours per week than any other group.

De Selle (19) made a survey of the extra-curricular activities of industrial-arts teachers of Oregon and classified the schools into three groups according to the number of boys enrolled. He stated in 1937 that,

> The median of the number of hours per week of classroom instruction increases with the enrollment. However, the median time devoted to extra-curricular activities does not show this tendency... (19, p. 23)

De Selle found that the median of the number of hours of weekly classroom instruction was 25.2, 28.7, and 30.3; whereas the median of the number of hours per week devoted to extra-curricular activities was relatively constant - 2.25, 3.3, and 2.4 for the three groups.

Heidenreich (32) reported for Arizona in 1942 that the average teaching load was six periods per day. Eighteen teachers reported teaching more than six periods per day and 43 teachers indicated that they spent 8707 hours during the school year in performing extra-curricular duties.

Heidenreich advised that this is an average of 202.5 hours for each industrial-arts teacher, or 5.6 hours per week, which compares favorably with the time spent by the non-industrial-arts teachers.

Lerner (37) reported for seven Missouri valley states in 1949 that the average industrial-arts teacher of Oklahoma worked six hours per day and taught one academic subject for a 57 minute period. The industrial-arts teacher of Kansas worked five and one-half hours per day. The teaching load in Colorado was six and one-half hours of daily instruction with one academic subject being listed on the average load, plus a two hour per week activity load. This load did not include the hours spent in coaching. Approximately 22 per cent of the 72 instructors in the surveyed group averaged 2.8 hours each week in extra-curricular activities.

The number of different daily preparations required of industrial-arts teachers

Diamond (20) reported for Michigan in 1927 that the number of instructors teaching one subject increased with the size of the cities. He stated that,

> It is more assuring, however, to note that forty per cent of all the teachers teach only one subject and sixty-five and five-tenths per cent of them teach one or two subjects. (20, p. 24)

In reporting on the industrial arts subjects taught by 409 teachers, Strickler (56) stated in 1927 that,

> Of these 409 teachers 72 per cent are special teachers of single subjects, 3 per cent teach combinations of more than three subjects... Three-fourths of all industrial-arts teachers are special teachers of one subject or branch of the field only. One-fifth of all teachers teach a combination of two of the industrial arts subjects, and about one-twentieth teach combinations involving three or more of the industrial arts subjects. (56, p. 78-80)

Davis (18) wrote in 1929 for Kansas that those teachers who were apt to be least qualified, by training experience, received the most burdensome field load. The inexperienced teachers began teaching in the small schools where they were required to teach in a number of fields and, when promoted, they went to larger schools and fewer fields.

For Iowa, Lynn (39) revealed in 1930 that the reported number of subjects per teacher ranged from one to eight. He stated that the basis of differentiation in industrial arts may vary with teachers since some may interpret "subjects" to mean those different trades which are sometimes compounded in one student project, while others refer only to recognized curricular subjects. Lynn concluded that three or four subjects per teacher were regarded as the normal number. His findings that the number and range of individual subjects per teacher decrease as teachers move from the smaller to the larger communities agree with Davis' report for Kansas.

Carlile (12) reported for Arizona in 1931 that there were few schools in which the demand for a single subject

was sufficient enough that teachers could teach one subject only. He stated that two and three subject combinations were the most prevalent in the typical schools.

Bolle (7) wrote in 1932 that 99 teachers of Illinois, or 20.8 per cent, taught one subject only. He stated that teachers in the small cities taught a larger number of subjects while those in the larger cities found more specialization in the field of industrial arts.

In a study of the teaching combinations of industrial-arts teachers of Iowa for the period 1922 to 1932, Hanson (31) found that the average industrial-arts teacher taught two additional subjects in the school year 1931-32. Twenty-two per cent of the teachers taught industrial arts only, based on the ten year average.

Carter (13) reported for Illinois in 1933 that,

> The median number of subjects per teacher has decreased, from 2.86 in 1930-31, to 2.5 in 1932-33... The number of teachers teaching no academic subjects has increased, from 62.5 per cent of the total in 1930-31, to 67.8 per cent in 1932-33... The number of teachers teaching one subject alone has increased, from 26.8 per cent in 1930-31, to 38.2 per cent in 1932-33... Mechanical drawing and woodwork are the two subjects most often taught in combination... The number of teachers teaching three subjects has decreased during the past three years. The most frequent combination is woodwork, mechanical drawing, coaching. These, with physical education, make the most frequent four-subject combination. No five-subject combination is reported more than once. (13, p. 177)

Cuffel (16) stated in 1937 that there appeared to be no

set combination of courses or number of courses in industrial arts education. He wrote that there were 16 industrial education courses offered in the high schools of Iowa and the course offering was made to fit the individual needs of the community or the teaching ability of the instructors.

Heidenreich (32) found in 1942 that the teaching of combinations of industrial arts with other subjects was increasing in the Arizona high schools. He wrote that 18 teachers reported teaching industrial arts subjects only and 38, or 68 per cent of the industrial-arts teachers, found it necessary to fill their schedules with one or more other subjects. With the exception of dramatics and coaching, most of these other subjects were closely related to the work of the industrial-arts teachers.

Busby (11) reported for Iowa in 1949 that thirteen of the thirty industrial-arts instructors who taught regular industrial arts classes taught industrial arts only. Eight teachers taught one other subject in addition to their industrial arts classes, and six of the eight teachers were coaching athletics.

A summary of the findings relating to the different daily preparations required of industrial-arts teachers reveals that the number and range of individual subjects per teacher decreases as teachers move from the smaller to

the larger communities. Lynn (39), Carlile (12), Hanson (31), and Carter (13) reported in 1930, 1931, 1932, and 1933 respectively that industrial-arts teachers were normally required to teach at least two or three subjects. Studies by Hanson (31) in 1932 and Busby (11) in 1949 indicated a decrease in the number of other subjects which the industrial-arts teachers of Iowa were required to teach. Heidenreich (32) however, advised in 1942 that the teaching of other subjects with industrial arts was increasing in Arizona high schools.

Enrollments which industrial-arts teachers have in shop classes and those classes in which other subjects are taught

Smith (55) observed the practices of 110 industrial teachers in Minnesota and found in 1924 that the average class size was 15 students with a range from five to 28.

Davis (18) reported for Kansas in 1929 that the median size of the junior high school industrial arts classes for all schools was 20.06 students per class or section. The median enrollment for the industrial arts classes in all the senior high schools was only 13.34 pupils. He stated that this low median class size was caused by the large number of small classes in small high schools.

The study of the factors related to the work of industrial-arts teachers of Kansas made by Livingston (38)

revealed in 1930 a median size of 14 for the industrial arts classes. Livingston stated that,

> This is really too small to make effective use of the instructor's time. It is surprising to note the number of teachers who have an average of less than 10 in their classes and the comparatively small group that have 24 or more. (38, p. 47)

Lynn (39) pointed out for Iowa in 1930 that school administrators have quite generally included industrial arts in an attempt to regularize and standardize pupil-hour costs. According to Lynn, the administrators claimed that there was no justification for having smaller shop groups than is ordinarily found in the classrooms. He stated that there was an evident movement in the direction of mass instruction in the industrial arts shops of the larger cities because 25 per cent of the teachers had no groups of less than 20 pupils and 11 per cent had none under 27 pupils. Lynn stated further that there was no such tendency towards mass instruction in the class II and III cities, since 75 per cent of the teachers reporting had no groups over 19 pupils in the class III cities.

Carlile (12) reported for Arizona in 1931 that,

> The three industrial arts subjects supplying 52 per cent of the classes have averages of 15.3, 14.1, and 17.7 students per class with medians of 16, 12, and 18 respectively. When we consider the wide ranges of the subjects, 15, 22, and 34, there is good evidence that nearly all of the classes are of substantial size. However, these subjects show that their smallest classes are not

> large enough to utilize the instructor's time to the best advantage... The average size of the classes runs less than 10 in only four industrial arts subjects. (12, p. 36)

Cuffel (16) wrote in 1937 for Iowa that shop classes ranged in size from two to 64 pupils with an average of 18.1 pupils and a median of 18 pupils. Thirty-eight per cent of all classes had enrollments of 20 or more pupils. Cuffel advised that the trend was in the direction of larger classes.

Schreiner (53) reported for Nebraska in 1938 that shop classes varied in size from two to 42 pupils, with an average enrollment of 18 to the class.

Time required by industrial-arts teachers for preparing and organizing materials of instruction

Lerner (37) made a study of the teaching loads of industrial-arts teachers in high schools of 200-300 enrollment for seven Missouri valley states. He found in 1949 that class preparations for the average industrial-arts teacher of Kansas demanded seven and seven-tenths hours a week. He stated that 68 per cent of the teachers of Kansas taught one or more academic subjects. In Colorado, six and six-tenths hours a week were spent in subject preparation.

Time spent by industrial-arts teachers in the care and maintenance of materials and equipment

Lerner (37) reported in 1949 that the average industrial-arts teacher of Kansas spent three and one-half hours a week in shop upkeep duties.

Bednar (5) made a study of public school maintenance, installation, and construction jobs performed by or under the direction of 392 industrial-arts teachers throughout the United States. He reported in 1955 that such jobs as painting equipment, resurfacing bench tops, and constructing shop made jigs and equipment were performed, in order of frequency, during class time, during vacation periods, and after school hours. He stated that,

> The instructors believed that only a very few of the shop maintenance and construction jobs, and none of the general maintenance and installation jobs should normally be performed by the shop teacher. They believed that performing excessive work of this nature themselves had an adverse influence upon their teaching effectiveness. (5, p. 11)

McArthur (41), in a study of the selection and management of industrial arts equipment in the secondary schools of Missouri, revealed in 1955 that,

> The majority of teachers did not allot specific time for maintenance of equipment nor did they include it as a phase of the instructional program to the extent specialists thought they should. Specialists indicated that slightly more than four hours per week should normally be allotted for maintenance work. (41, p. 48)

Chapter III

ANALYSIS OF DATA

This study of the extra-curricular and non-teaching duties of industrial-arts teachers in the high schools of Wisconsin provides the answers to many questions which have not heretofore been known. There is little doubt, however, that an even larger number of queries relating to the intangible, yet significant, phases of teacher personnel activities remain unanswered. The investigation does present evidence that a large proportion of the industrial-arts teachers find it necessary to spend an excessive amount of time in performing extra-curricular and non-teaching duties. Whereas teacher supervision of extra-curricular activities after regular school hours is performed on a voluntary basis in most cases, if any pay is received it is usually token pay only.

Extra-curricular and non-teaching duties

Citation of clubs and related activities. Teachers who can assist with activities related to club work are, no doubt, in greater demand than those who are able only to teach regular subject work. Table 2, page 33, was made to show the types of activities which the teachers sponsored. Note that the majority of the clubs are concerned with

Table 2. Industrial-Arts Teachers Distributed According to Sponsorship of Clubs or Participation in Related Activities

Club or related activity	Number of teachers	Club or related activity	Number of teachers
Agriculture club	1	Industrial arts club	32
Airplane club	1	Industrial Arts Awards Fair, Stout State College	1
Arts and crafts club	1	Industrial Arts Fair--Chicago	1
Audio-visual club	6	Leathercraft club	1
Boy Scouts of America	1	Lettermen's club	3
Camera club	1	Model club	2
Car club	1	Multigraph club	1
Civil defense club	3	Noon hour machine shop club	1
Conservation club	4	Photography club	2
Crafts club	1	Printers club	2
Drawing club	1	Projection club	4
Drawing contests, American Society of Tool Engineers	1	Puzzles club	1
Dry kiln club	1	Radio club	2
Engineer's club	1	Rifle club	5
Film crew club	1	Rod and gun club	1
Ford Industrial Arts Awards	10	Safety patrol	2
Foreman's club	1	School safety club	1
Forensics club	1	Sportsmen's club	1
Forestry club	2	Stage crew club	1
4-H club	1	Stout Craftsmen's club	9
Future Architects club	1	Student council	1
Future Farmers of America	1	Student service club	2
Game club	1	Traffic safety club	2
Girls' woodwork club	1	Visual aids club	1
Handicrafts club	2	Youth council	1
Hi Y club	1	Total	144
Hobby club	15	None indicated	273
Hobby club for girls	1	Total teachers in study	407
Future Homemakers of America	1		

Findings: Ten teachers, or 2.46 per cent, sponsor 2 clubs each.

manipulative work closely related to industrial arts while the remainder involve school service or sports activities. There were only 134 teachers, or 33 per cent of the 407 respondents, who reported having club assignments. This small number may be due partially to the usual administrative practice of having teachers volunteer for club work of their own choice in order to insure that they have the ability and willingness to act as sponsors.

Subject Clubs. The activities of the subject clubs are related to the content of new (outside the curriculum) subjects as well as old subjects which are included in the curriculum of the various high schools. Sponsors of subject clubs often present subjects from a different approach, or by new procedures, and thereby assist in bringing about changes in the school curriculum which are needed to meet new conditions in education. It is not surprising to note in Table 3, page 35, that the majority are industrial-arts clubs. Activities connected with the Ford Industrial Arts Awards program which were sponsored by 10 teachers, or 17 per cent of those having subject clubs, may involve the course content and manipulative processes of one or more subjects.

Hobby clubs. Teachers reported 21 different clubs representing personal hobbies related to avocational or

Table 3. Industrial-Arts Teachers Distributed According to Number of Subject Clubs Sponsored

Subject club	Number of teachers	Per cent
Agriculture club	1	1.67
Arts and crafts club	1	1.67
Crafts club	1	1.67
Drawing club	1	1.67
Dry kiln club	1	1.67
Engineer's club	1	1.67
Ford Industrial Arts Awards	10	16.67
Forensics club	1	1.67
Future architects club	1	1.67
Girls woodwork club	1	1.67
Industrial arts club	32	53.33
Industrial Arts Awards Fair, Stout State College	1	1.67
Industrial Arts Fair--Chicago	1	1.67
Leathercraft club	1	1.67
Noon hour machine shop club	1	1.67
Printers club	2	3.33
Radio club	2	3.33
Stout Craftsmen's club	1	1.67
Total	60	100.00

recreational interests as shown in Table 4, page 36. Hobby clubs, with no specific hobbies indicated, were sponsored by 15, or 31 per cent, of the teachers. Five teachers, or 10 per cent, had charge of rifle clubs while four teachers, or 8 per cent, sponsored conservation clubs.

Organizations related to school management. Table 5, page 37, reveals that organizations related to school management were represented 412 times by industrial-arts

Table 4. Industrial-Arts Teachers Distributed According to Number of Hobby Clubs Sponsored

Hobby clubs	Number of Teachers	Per cent
Airplane club	1	2.10
Boy Scouts of America	1	2.10
Camera club	1	2.10
Car club	1	2.10
Conservation club	4	8.33
Forestry club	2	4.17
Future Farmers of America	1	2.10
Future Homemakers of America	1	2.10
Game club	1	2.10
Handicrafts club	2	4.17
Hi-Y club	1	2.10
Hobby club	15	31.25
Hobby club for girls	1	2.10
Lettermen's club	3	6.25
Model club	2	4.17
Photography club	2	4.17
Puzzles club	1	2.10
Rifle club	5	10.42
Rod and gun club	1	2.10
Sportsmen's club	1	2.10
4-H club	1	2.10
Total	48	100.00

teachers. Five teachers, or 1.23 per cent of the 407 respondents, sponsored two organizations each. Home room assignments were given to 241, or 59 per cent of the respondents, while study hall duty was assigned to 136, or 33 per cent, of the teachers. The stage crew club and the organizations concerned with audio-visual aids were the most prevalent responsibilities of the industrial-arts teachers.

Table 5. Industrial-Arts Teachers Distributed According to the Number of Organizations Related to School Management which They Sponsor

Organizations related to school management	Number of teachers	Per cent
Audio visual club	6	1.46
Civil Defense club	3	.73
Film crew club	1	.24
Foreman's club	1	.24
Home room	241	58.50
Multigraph club	1	.24
Projection club	4	.97
Safety patrol	2	.48
School safety club	1	.24
Stage crew club	9	2.18
Student council	2	.48
Student service club	2	.48
Study hall	136	33.01
Traffic safety club	1	.24
Visual aids club	1	.24
Youth council	1	.24
Total	412	100.00

Findings: Five teachers, or 1.23 per cent, sponsor two organizations each.

Note: The term "school management" refers to those organizations which are needed to insure efficient administration and guidance as well as to assist the faculty in their program of instruction.

School activities which industrial-arts teachers are required to supervise and/or attend after school hours.

Several teachers from the smaller communities reported that the conditions of their contracts specified that they were required to participate in activities after school hours. In the larger schools many of the teachers indicated that

it was their "moral" obligation to assume such duties. The school activities cited in Table 6, page 39, were supported by 366 teachers, or 90 per cent of the 407 respondents. Over half of the teachers, or 51 per cent, worked at athletic events and 47, or 12 per cent, coached athletics. Duties connected with dances and parties were assumed by 165, or 40 per cent, of the teachers. One hundred and seventeen teachers, or 29 per cent, were responsible for the sale and/or collection of tickets issued for various school activities. There were only 12 industrial-arts teachers who reported that they had to work on the maintenance of equipment after school hours. This may very possibly reflect good shop management practices in the training of students and in the performance of timely preventive maintenance work.

Special qualifications possessed by industrial-arts teachers for performing extra-curricular and non-teaching duties

A large number of the respondents advised that courses taken in colleges or universities and their broad experiences in extra-curricular activities provided them with the necessary qualifications for performing extra-curricular and non-teaching duties. The eight teachers who listed their qualifications for coaching athletics in Table 7, page 40, have a similar background of experience. Trade experience and specialized training in business and industry

Table 6. Citation of Number of School Activities which are Performed, Supervised and/or Attended by Industrial-Arts Teachers after School Hours

Activity	Frequency
Activity fund	1
Assembly program director	3
Athletic coaching	47
Athletic department official	9
Athletic events	208
Audio visual aids staff	7
Better Homes Week program	1
Bus chaperone	31
Class advisor	34
Committee work	14
Concessions	4
Dances and parties	165
Equipment maintenance	12
First aid	1
Forensics	1
Guidance and testing	4
Homecoming activities	4
Junior prom activities	23
Music programs	20
Newspaper, handbook, or yearbook	8
Open house	20
Parent teachers association conferences	16
Photographic work	2
Play production	10
Plays, supervision	49
Public address system operator	5
Publicity	1
Recreation programs	2
School census	3
School printing	1
School safety	3
Senior class activities	17
Stage work	15
Ticket sales or collection	117

Table 7. Industrial-Arts Teachers Distributed According to Special Qualifications Possessed for Performing Extra-Curricular and Non-Teaching Duties

Extra-curricular and non-teaching duties	Special qualifications	Number of teachers
Activity fund	Owner and operator of insurance agency	1
Athletic coaching	Participation in college athletics	4
	Minor in physical education	1
	Courses in coaching and physical education	1
	Army playground work	1
Athletic department official	Camp counselor for 20 summers	1
	City director of recreation	2
Audio visual aids staff	Courses in audio visual aids	1
Audio visual club	Professional projectionist, experience in college	1
Class advisor	High school principal	1
	Courses in guidance	1
Ford Industrial Arts Awards Program	Eight years trade experience	2
	Drafting and design experience	1
Hi-Y club	Eagle scout, Sea scout, Pilot with group training	1
Industrial arts club	Army radio repairman	1
	Boy Scout field executive	1
Junior prom activities	College extra-curricular work in music	1
Printer club	Printing trade experience	1
Public address system operator	Journeyman electrician	1
Radio club	Amateur radio operator	1
School forest club	Experience in engineer's office for school forest building	1
School newspaper	Courses in journalism and experience as a reporter	1
	Experience in printing trade	1
School safety club	Wisconsin Civil Defense certificate	2
Stage craft club	Course in dramatics and stage production	1
	Carpentry experience	5
Stout Craftsman's Fair	Three years experience with U.S. Naval construction batallion	1
Student conferences	Courses in guidance	2

were indicated by 17 teachers as special qualification.

Time spent in teaching

Table 8 shows that the mean number of shop classes taught per day is 4.9. Three hundred and three teachers, or 75 per cent of the 406 respondents, teach from four to five shop classes per day. Table 9, page 42, reveals that 279 teachers, or 70 per cent of the 399 respondents, did not teach any subjects other than industrial arts. There is a mean of .7 of a period per day in which other subjects are taught.

Table 8. Industrial-Arts Teachers Distributed According to the Number of Shop Classes Taught per Day

Number of shop classes	Number of teachers	Per cent
1	5	1.23
2	11	2.71
3	24	5.91
4	120	29.56
5	183	45.07
6	61	15.02
7	2	.49
Total	406	100.00
None indicated	1	
Mean	4.9	

Table 9. Industrial-Arts Teachers Distributed According to the Number of Periods per Day Other Subjects Are Taught

Number of periods per day	Number of teachers	Per cent
0	279	70.00
1	58	14.54
2	45	11.28
3	14	3.51
4	2	.50
5	1	.25
Total	399	100.00
None indicated	8	
Mean	.7	
Median	.6	

Since the median length of class periods is 53.2 minutes, as shown in Table 10, page 43, industrial-arts teachers are required to spend an average of four hours and 21 minutes per day in teaching shop classes and an average of 37 minutes per day in teaching other subjects. The total average length of time that industrial-arts teachers spend in teaching is four hours and 58 minutes per day. In figuring the length of time spent per five day week, note that the total teaching time is 24 hours and 50 minutes.

Table 10. Industrial-Arts Teachers Distributed According to Length of Class Periods

Length of period in minutes	Number of teachers	Per cent
73 - 76	2	.50
69 - 72	9	2.24
65 - 68	2	.50
61 - 64	0	-
57 - 60	29	7.32
53 - 56	228	56.86
49 - 52	81	20.20
45 - 48	50	12.47
Total	401	100.00
Not indicated	6	
Mean	53.6	
Median	53.2	

Time spent in extra-curricular and non-teaching duties

Club duty and related activities. The median amount of time spent in sponsoring clubs or related activities, which was reported by 124 teachers or 93 per cent of the total number of teachers who perform such duties, was one hour and two minutes per week, as shown in Table 11, page 44.

Table 11. Industrial-Arts Teachers Distributed According to Amount of Time Spent per Week for Club Duty and Related Activities

Minutes per week	Number of teachers	Per cent
595 - 604	1	.81
475 - 484	1	.81
355 - 364	1	.81
295 - 304	8	6.45
235 - 244	6	4.84
205 - 214	1	.81
175 - 184	8	6.45
145 - 154	6	4.84
115 - 124	20	16.13
85 - 94	3	2.42
75 - 84	1	.81
55 - 64	51	41.12
45 - 54	2	1.61
25 - 34	12	9.68
15 - 24	3	2.42
Total	124	
Mean	109.8 Minutes or 1 hour and 49.8 min.	
Median	62.4 Minutes or 1 hour and 2.4 min.	

Note: Only 124 of the 407 respondents indicated the time spent per week for club duty and related activities while 283 failed to furnish such information

School activities performed after school hours. Three hundred and six teachers, or 84 per cent of the 366 teachers who participated in school activities after school hours, reported that they spent a median of one hour and 42 minutes per week on such activities, as indicated in Table 12. Fourteen of the 47 teachers who participated in coaching athletics spent an average of over 10 hours per week. One teacher spent an average of 12 hours per week in printing production work for his school.

Table 12. Industrial-Arts Teachers Distributed According to the Average Number of Hours per Week Spent on School Activities after School Hours

Hours per week	Number of teachers	Per cent
14 - 15	5	1.63
12 - 13	6	1.96
10 - 11	15	4.90
8 - 9	7	2.29
6 - 7	13	4.25
4 - 5	27	8.82
2 - 3	104	33.99
0 - 1	129	42.16
Total	306	100.00
Not indicated	60	
Mean	3.7 hours	
Median	1.7 hours	

Home room duty. Two hundred and forty-one of the industrial-arts teachers, or 59 per cent of the 407 respondents, are responsible for home room duty. Table 13, page 47, shows that 237 of these teachers spent a median of one hour and 58 minutes per week in performing home room duties.

Study hall duty. Two hundred and seventy-one industrial arts teachers, or 66 per cent of the respondents, do not have a study hall assignment. Table 14, page 48, indicates that 82 teachers have the equivalent of one study hall per day. Of the 11 teachers who average two study halls per day, nine teach in the smaller communities which do not exceed 5,000 in population. Table 14 shows a median of .7 for the number of study hall assignments per week. With the median length of class period being 53.2 minutes, as indicated in Table 10, page 43, it is found that industrial-arts teachers spend an average of 37.2 minutes per week in the supervision of study halls.

Cafeteria and/or hall duty. Table 15, page 49, shows that the median amount of time spent by 213 teachers, or over half of the respondents, in performing cafeteria and/or hall duty is 55.4 minutes per week. It is probable that the 27 teachers who spend from four hours and 55 minutes to five hours and four minutes per week are responsible for cafeteria as well as hall duty. The 95 teachers who spend

Table 13. Industrial-Arts Teachers Distributed According to Amount of Time Spent in Performing Home Room Duty

Minutes per week	Number of teachers	Per cent
595 - 604	5	2.11
535 - 544	1	.42
475 - 484	1	.42
445 - 454	1	.42
415 - 424	1	.42
355 - 364	1	.42
295 - 304	22	9.28
265 - 274	1	.42
235 - 244	19	8.02
225 - 234	1	.42
195 - 204	1	.42
175 - 184	21	8.86
165 - 174	1	.42
155 - 164	1	.42
145 - 154	25	10.55
135 - 144	1	.42
115 - 124	26	10.97
85 - 94	17	7.17
75 - 84	5	2.11
55 - 64	63	26.58
45 - 54	2	.84
25 - 34	16	6.75
15 - 24	5	2.11
Total	237	100.00
Mean	141.7 minutes or 2 hours--21.7 min.	
Median	118.1 minutes or 1 hour --58.1 min.	

less than 45 minutes per week in such duties are undoubtedly performing hall duty only.

Table 14. Industrial-Arts Teachers Distributed According to Total Number of Study Halls Supervised each Week.

Number of study halls	Number of teachers	Per cent
0	271	66.6
1	15	3.7
2	10	2.5
3	4	1.0
4	8	2.0
5	82	20.1
6	2	.5
7	1	.2
8	2	.5
9	1	.2
10	11	2.7
Total	407	100.0
Mean	2.4	
Median	.7	

Table 15. Industrial-Arts Teachers Distributed According to Amount of Time Spent in Performing Cafeteria and/or Hall Duty

Minutes per week	Number of teachers	Per cent
595 - 604	3	1.41
475 - 484	1	.47
355 - 364	1	.47
295 - 304	27	12.68
235 - 244	5	2.35
175 - 184	7	3.29
145 - 154	8	3.76
115 - 124	10	4.69
95 - 104	3	1.41
85 - 94	2	.94
75 - 84	4	1.83
65 - 74	1	.47
55 - 64	40	18.78
45 - 54	6	2.86
35 - 44	17	8.45
25 - 34	36	16.85
15 - 24	42	19.72
Total	213	100.00
Not indicated	194	
Mean	71.6 minutes or 1 hour and 11.6 min.	
Median	55.4 minutes	

Amount of time industrial-arts teachers are expected to work at school on Saturdays or evenings without reimbursement

It is difficult to state accurately the specific duties which industrial-arts teachers perform, without pay, at school on Saturdays or evenings. The findings in Table 16, page 51, indicate that 180 teachers worked a median of 4.4 hours per month without reimbursement. There were 78 teachers who worked up to three hours per month without pay. Their duties included the construction of stage scenery, maintenance of shop equipment, preparations for open house, operation of public address systems, assisting with music and play productions, chaperoning bus trips and dances, and supervising athletic events. The five teachers who worked from 40 to 47 hours per month under the same condition performed stage construction work, school printing jobs, professional committee work, maintenance work on track and other athletic equipment, and assisted with the production of school plays.

Methods by which industrial-arts teachers are compensated for extra-curricular work performed during out-of-school hours

Table 17, page 52, indicates that those teachers who performed duties connected with athletic events, dances and parties, and the sale or collection of tickets out of school hours were most frequently given extra compensation. Three

Table 16. Industrial-Arts Teachers Distributed According to Amount of Time Required for Work at School on Saturdays or Evenings Without Reimbursement

Hours per month	Number of teachers	Per cent
44 - 47	2	1.11
40 - 43	3	1.67
36 - 39	0	-
32 - 35	1	.56
28 - 31	1	.56
24 - 27	2	1.11
20 - 23	6	3.33
16 - 19	1	.56
12 - 15	16	8.89
8 - 11	26	14.44
4 - 7	44	24.44
0 - 3	78	43.33
Total	180	100.00
Not indicated	227	
Mean	7.7	
Median	4.4	

teachers reported that they considered the additional pay as nominal because of the great amount of time demanded. Seventy-one teachers, or 17 per cent of the total number reporting, stated they received additional compensation

Table 17. Extra-Curricular (Out-of-School Hours) Work Performed and Methods by which Industrial-Arts Teachers Were Compensated

Extra-curricular duties	Number performed	Number of cases paid and methods of compensation: Extra pay	Lighter class load	Extra pay and lighter class load
Athletic coaching	47	21	1	
Athletic official duties	9	2		1
Athletic events	208	51	6	2
Audio visual aids staff	7	2		
Bus chaperone	31	1		
Class advisor	34	1		
Dances and parties	165	27	4	
Equipment maintenance	12	3		2
First aid	1	1		
Junior prom activities	23	3	3	1
Music programs	20	2		
Newspaper, Handbook, Yearbook	8	1		
Open house	20	2	1	
Parent Teachers Association conferences	16	1		
Photographic work	2	1		
Play production	10	5		
Plays, supervision	49	7		
Public address system operator	5	1		
Recreation programs	2	2		
School printing	1	1		
Senior class activities	17	2	1	
Stage work	15	2	2	
Ticket sales or collection	117	25	5	
Duties unspecified		5	10	2

above their regular salaries in the form of extra pay, lighter class loads, or extra pay and lighter class loads.

Educational background of industrial-arts teachers

Degrees earned. Although the granting of certificates for high school teaching in Wisconsin is quite generally predicated on four years of professional training, Table 18, page 54, indicates that there were still 17 teachers, or four per cent of the respondents, who did not possess a Bachelor's degree. Table 19 shows that 96 per cent have a Bachelor's degree but the survey revealed that seven teachers, or 1.72 per cent, had two Bachelor's degrees each. One hundred and twenty-four teachers reported having a Master's degree and two teachers stated they had two Master's degrees each.

Over three-fourths (84 per cent) of the industrial-arts teachers surveyed have received their Bachelor's degree from Stout State College and the Wisconsin State Colleges at Platteville and Oshkosh. Two hundred and eleven (54 per cent) of these teachers received the Bachelor's degree and 83 of them (70 per cent) received the Master's degree from Stout State College.

Table 18. Industrial-Arts Teachers Distributed According to Colleges and Universities from which Degrees Were Obtained

College or University	Bachelor's degrees	Per cent	Master's degrees	Per cent
Beloit College	1	.3		
Bradley University	4	1.0	3	2.4
Central Missouri State College	1	.3		
Colorado State College	1	.3	3	2.4
Colorado State University	1	.3	3	2.4
Columbia University	1	.3		
Gustavus Adolphus College	1	.3		
Illinois State Normal University	1	.3		
Indiana Ball State	1	.3		
Iowa State College	2	.5	3	2.4
Lawrence College			2	1.6
Luther College	1	.3		
Marquette University	1	.3	7	5.6
Midland College	1	.3		
Milwaukee School of Engineering	1	.3		
Moorhead State College	1	.3		
New Mexico Highlands University	1	.3		
North Dakota State College	1	.3		
Northern Illinois University	4	1.0	1	.8
Northern Michigan College	3	.7		
Northland College	1	.3		
Northwestern University			3	2.4
Northwest Missouri State College	1	.3		

Table 18. Industrial-Arts Teachers Distributed According to Colleges and Universities from which Degrees Were Obtained (Cont'd)

College or University	Bachelor's degrees	Per cent	Master's degrees	Per cent
Oklahoma State University of Agriculture and Applied Science			1	.8
St. Cloud State College	2	.5		
South Dakota State College of Agriculture and Mechanic Arts	1	.3	1	.8
Southern Illinois University	1	.3		
Stout State College	211	54.1	83	66.9
University of Michigan			1	.8
University of Minnesota	5	1.2	5	4.0
University of Oklahoma			1	.8
University of Wisconsin	7	1.7	5	4.0
University of Wisconsin, Milwaukee	1	.3		
Wayne State University			2	1.6
Western Michigan University	2	.5		
Westmar College	1	.3		
Winona State College	2	.5		
Wisconsin State College, Eau Claire	1	.3		
Wisconsin State College, La Crosse	1	.3		
Wisconsin State College, Milwaukee	2	.5		
Wisconsin State College, Oshkosh	39	10.0		
Wisconsin State College, Platteville	76	19.5		
Wisconsin State College, River Falls	8	2.0		
Total	390		124	

Degree not indicated - 17

Table 19. Industrial-Arts Teachers Distributed According to Amount of Professional Training

College or University training	Number of teachers	Per cent
Attended, but did not graduate	16	3.94
Bachelor's degree	390	96.06
Work taken beyond Bachelor's degree	52	12.81
Master's degree	124	30.54
Work taken beyond Master's degree	6	1.02
None indicated	1	-

Read: Sixteen teachers, or 3.94 per cent of the 406 teachers reporting, attended college or university but did not graduate.

Major and minor fields of study. Table 20, page 57, shows that 351 teachers, or 86 per cent, majored in industrial arts. Forty-seven teachers, or 12 per cent, majored in industrial education. All of the industrial-arts teachers teach subjects in their major field of study.

Table 21, page 58, indicates that 179 teachers, or 44 per cent, minored in science and 173 teachers, or 43 per cent, minored in social science. Sixty-seven of the 407 teachers who submitted returns, or 17 per cent, teach subjects in their minor fields. Sixty-six of the respondents, or 16 per cent, teach subjects in their major and minor fields of study.

Table 20. Industrial-Arts Teachers Distributed According to Major Fields of Study

Majors	Frequency	Per cent
Administration	11	2.7
Agricultural education	15	3.7
Art education	2	.5
Economics	3	.7
Education	24	5.9
Engineering	4	1.0
English	6	1.5
Guidance	8	2.0
Industrial arts	352	86.2
Industrial education	47	11.5
Industrial science	1	.2
Mathematics	3	.7
Physical education	6	1.5
Science	14	3.4
Social science	7	1.7
Trade and industrial education	3	.7
Vocational education	6	1.5

Read: Eleven teachers, or 2.7 per cent of the 407 teachers reporting, majored in administration.

Table 21. Industrial-Arts Teachers Distributed According to Minor Fields of Study

Minors	Frequency	Per cent
Administration	7	1.7
Agriculture	9	2.2
Art	1	.2
Driver education	8	2.0
Foreign languages	2	.5
Economics	1	.2
Education	1	.2
English	88	21.6
Guidance	7	1.7
Industrial arts	13	3.2
Mathematics	72	17.7
Physical education	35	8.6
Psychology	6	1.5
Science	179	44.0
Social science	173	42.5
Sociology	5	1.2
Vocational education	4	1.0

Read: Seven teachers, or 1.7 per cent of the 407 teachers reporting, minored in administration.

Years of teaching experience. Eighty-three teachers reported that they had 30 years or more of teaching experience while over half of the teachers had less than 10 years of such experience. Table 22, page 60, shows a median of 8.2 years of teaching experience.

Years of teaching in present position. Table 23, page 61, shows that 225 teachers, or 56 per cent of the respondents, have taught less than eight years in their present position, with a median of six years.

Number of different daily preparations required

Table 24, page 61, indicates that 131 teachers, or 33 per cent of the 397 respondents, had to make two subject preparations per day. The mean number of 2.4 preparations per day includes other subjects taught as well as industrial arts. As indicated in Table 25, page 62, 218 teachers, or 54 per cent of the 405 respondents, teach on the junior and senior high school level. When grade levels as well as subjects are considered in determining the number of preparations required, it can be seen that there may be a certain amount of variation from one year to another resulting from changes in enrollment and student elections of subjects.

Table 22. Industrial-Arts Teachers Distributed According to Years of Teaching Experience

Years of experience	Number of teachers	Per cent
30 or more	83	20.44
28 - 29	5	1.24
26 - 27	12	2.96
24 - 25	9	2.22
22 - 23	10	2.47
20 - 21	14	3.45
18 - 19	5	1.24
16 - 17	9	2.22
14 - 15	11	2.71
12 - 13	9	2.22
10 - 11	21	5.18
8 - 9	57	14.04
6 - 7	29	7.14
4 - 5	39	9.61
2 - 3	67	16.52
0 - 1	26	6.40
Total	406	100.00
Not indicated	1	
Mean	14 years	
Median	8.2 years	

Table 23. Industrial-Arts Teachers Distributed According to the Number of Years Teaching in Present Position

Years in present position	Number of teachers	Per cent
28 - 31	56	13.83
24 - 27	7	1.73
20 - 23	14	3.46
16 - 19	36	8.89
12 - 15	27	6.67
8 - 11	40	9.88
4 - 7	75	18.52
0 - 3	150	37.04
Total	405	100.00
Not indicated	2	
Mean	9.0	
Median	6.0	

Table 24. Industrial-Arts Teachers Distributed According to Number of Different Daily Preparations Required

Number of preparations	Number of teachers	Per cent
1	105	26.45
2	131	33.00
3	92	23.17
4	49	12.34
5	14	3.53
6	6	1.51
Total	397	100.00
Not indicated	10	
Mean	2.4	

Table 25. Industrial-Arts Teachers Distributed According to High School Level Taught

High school level	Number of teachers	Per cent
Junior high school	78	19.26
Senior high school	109	26.91
Junior and senior high school	218	53.83
Total	405	100.00
Not indicated	2	

Table 26, page 63, cites the number of periods per day that specific areas of work are taught. These areas are arranged in order of frequency with drawing at the top of the list as being taught by the largest number of teachers.

Average daily enrollments in industrial arts and other subject classes

Tables 27 to 36, inclusive, pages 64-73, show the size of classes taught by industrial-arts teachers. The shop classes are grouped according to the organizational plans upon which they are operated. The largest classes are those in which subjects other than industrial arts were taught although there was only one teacher each for the small class of 15 and the large classes of 33 and 32 pupils.

Table 26. Areas of Instruction Distributed According to Number of Periods per Day Taught by Industrial-Arts Teachers

Areas of instruction	Number of periods per day						
	1	2	3	4	5	6	7
Drawing	73	55	28	14	18	4	
Woodwork	30	50	40	25	22	3	1
Metalwork	28	25	16	11	5	1	
Comprehensive general shop	10	7	5	12	11	10	
Limited general shop	9	9	7	9	11	3	
Electricity	20	7	4	1	4	1	
Printing	5	10	4	7	3	5	
Machine shop	5	3	3	8	6	3	
Crafts	15	4					
Auto mechanics	6	5		3			
Blueprint reading	3						
Welding	1	2					
Home mechanics	2						
Radio	1	1					
Aeronautics		1					
Plumbing		1					

Table 27. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment under 100

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
9		1		
10	1			
11				
12		1		
13				
14			1	
15				1
16				
17				
18		1		
19		1		
20				
Average	10	13.6	14	15

Table 28. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 101-300

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
5			1	
6			1	1
7		1		
8			1	1
9		1		
10		1		
11	1		1	2
12	3	4	1	1
13	2	6		
14	1	2	3	
15	1	3	1	1
16	2	5	3	
17		2	2	
18	2	5	2	
19	3		2	
20	2	2	1	2
21		1		
22		2	2	
23				2
24		4		
25				3
26				1
27				
28				2
29				
30				1
31				
32				
33			1	1
34				
35				
36				
37				
38				
39				
40				2
41				
42				
43				
44				
45				1
Average	15.7	16.2	16	22.8

Table 29. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 301-500

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
7				1
8				
9				
10	1			
11		1	1	
12	1	2		
13		3	1	
14		3	1	
15	1	1	1	
16	2	2	2	
17	2	3		
18	3	1	2	
19	2	2	3	
20	2	7	3	1
21	2	1		
22	1	3		
23	1	2	3	
24	2	1		
25	1		1	
26	1			1
27		2		
28				2
29				
30			1	2
31				1
32				
33		1		
Average	19.1	18.3	19.1	25

Table 30. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 501-700

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
8				1
9				
10				
11		1		
12		1		
13	1			
14	2	3	2	
15	1			
16	4	1		
17	2	4		
18	5	2	1	
19	2	3		
20	5	3	2	1
21	4	3		
22	7	8	1	1
23	1	3		
24	6	3	2	
25	6		3	
26		1		
27	1	2		
28				
29			1	1
30	1	1		2
31		1		
32				1
58				1
Average	20.7	20.6	21.7	27.1

Table 31. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 701-900

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
4				1
5				
6				
7				
8				
9				
10				1
11	1			
12		1		
13				
14		1		
15	1		1	
16	2			
17				
18	2	1	1	
19	1	2		
20	3	2		
21				
22	1			
23	2			
24	4	1		
25	3	4		
26	1			
27	3			
28		1		
29	2			
30				
31				
32				
33				1
Average	22.2	21.1	16.5	15.7

Table 32. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 901-1,100

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
12			1	
13				
14				
15				1
16	2			
17	3	1		
18	2			
19	3	1		
20	4	1		2
21	3			
22	2	1		
23	2			
24	3			
25	2			
26				1
27	1			
28				
29				
30	1	1		
31	1			
32	1			1
33	1			
Average	22.1	21.6	12	22.6

Table 33. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 1,101-1,500

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
7				1
8				
9				
10				
11				
12				
13				
14				
15		1		
16	1			
17	1			
18		1		
19	1			
20	5	1		
21	2	1		
22	6	1		
23				
24	2	1		
25	9	3		2
26	4			
27	4			
28	1			1
29	1		1	
30	5	1		
31				
32	2			1
33				2
34	1			
35	2			
Average	25.2	22.5	29	26.1

Table 34. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 1,501-2,000

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
11	1			
12				
13				
14				
15	1	1		
16				
17	2			
18	1			
19	1			
20	1			
21				
22	3	3		
23	2			
24	4	4		
25	9	1		
26	2			
27				
28	1			
29	1			
30				
31	1			
32				
33				1
Average	23	22.4		33

Table 35. Size of Classes Taught by Industrial-Arts Teachers in Schools with Enrollment of 2,001-3,000

Size of classes	Unit shop	Limited general shop	Comprehensive general shop	Other subjects
15	1			
16	2			
17	1			
18				
19				
20	3			
21	1			
22	1			
23	1			
24	1			
25	5	1		
26	1			
27	3			
28	3			
29				
30	1			
31	1			
32				1
Average	23.6	25		32

Table 36. Average Size of Classes Taught by Industrial-Arts Teachers Distributed According to School Enrollment, Type of Shop Organization, and Other Subjects

Type of shop organization and subjects taught	Under 100	101-300	301-500	501-700	701-900	901-1100	1,101-1,500	1,501-2,000	2,001-3,000
Unit shop	10	15.7	19.1	20.7	22.2	22.1	25.2	23	23.6
Limited general shop	13.6	16.2	18.3	20.6	21.1	21.6	22.5	22.4	25
Comprehensive general shop	14	16	19.1	21.7	16.5	12	29	-	-
Subjects taught other than industrial arts	15	22.8	25	27.1	15.7	22.6	26.1	33	32

In considering a comparison of class sizes given for the various shop classes, reference may be made to Table 37, page 75, for determining the number of teachers, classified according to school enrollment, who employ the various plans of shop organization.

The unit shop classes are slightly larger than those organized on the limited general shop plan. It is encouraging to note that the comprehensive general shop classes were the smallest because they are generally considered to be the most difficult to teach. There was only one teacher who indicated that he taught the excessively large class of 29 students organized on this plan. Teachers from schools having enrollments of over 1,500 students did not indicate having classes organized on the comprehensive general shop plan. This may be due somewhat to the small percentage of returns received from the larger schools. Table 38, page 76, shows that 70 per cent of the respondents taught in schools ranging in enrollment under 100 up to 1,100 students.

Time required for preparing and organizing materials of instruction

Table 39, page 76, reveals that a mean of 5.1 hours per week, or approximately one hour per day, is required by industrial-arts teachers for getting out materials for class use, organizing materials of instruction, building and

Table 37. Industrial-Arts Teachers Distributed According to Type of Shop Organization and Total School Enrollment

School enrollment	Type of shop organization											
	Unit shop		Limited general shop		Comprehensive general shop		Unit and limited general shop		Unit and comprehensive general shop		Unit, limited general and comprehensive general shop		Limited general and comprehensive general shop	
Under 100	0	-	5	71.43	0	-	1	14.29	0	-	0	-	1	14.29
101-300	7	12.07	28	48.28	14	24.14	8	13.79	1	1.72	0	-	0	-
301-500	10	16.39	25	40.98	13	21.31	7	11.48	2	3.28	1	1.64	3	4.92
501-700	33	39.76	24	28.92	5	6.03	14	16.87	1	1.20	2	2.41	4	4.82
701-900	15	44.12	9	26.47	0	-	7	20.59	2	5.82	1	2.94	0	-
901-1100	28	73.68	7	18.42	1	2.63	2.	5.26	0	-	0	-	0	-
1101-1500	42	72.41	9	15.52	1	1.72	4	6.90	2	3.45	0	-	0	-
1501-2000	30	76.92	9	23.08	0	-	0	-	0	-	0	-	0	-
2001-3000	19	79.17	3	12.50	0	-	2	8.33	0	-	0	-	0	-

Table 38. Industrial-Arts Teachers Distributed According to Total Enrollment of School

School enrollment	Number of teachers	Per cent
Under 100	7	1.74
101 - 300	58	14.43
301 - 500	61	15.17
501 - 700	83	20.65
701 - 900	34	8.46
901 - 1100	38	9.45
1101 - 1500	58	14.43
1501 - 2000	39	9.70
2001 - 3000	24	5.97
Total	402	100.00
Not indicated	5	

Table 39. Industrial-Arts Teachers Distributed According to Number of Hours per Week Required for Ordering and Checking Supplies, Preparing Stock for Class Use, Organizing Materials of Instruction, Building Shop Models, and Correcting Tests

Hours per week	Number of teachers	Per cent
10 - 11	54	13.27
8 - 9	48	11.79
6 - 7	43	10.57
4 - 5	139	34.15
2 - 3	80	19.66
0 - 1	43	10.57
Total	407	100.00
Mean 5.1 Median	4.1	

setting up instructional aids, and correcting tests. One hundred and thirty-nine teachers, or 34 per cent of the respondents, required from four to five hours per week for such duties.

Time required for the care and maintenance of tools and equipment

Nothing is more valuable to the industrial-arts teacher than the proper utilization of time and energy. Table 40, page 78, shows that the teachers who participated in this study spent a median of 3.6 hours per week in the care and maintenance of tools and equipment. Much of this type of work is, or should be, distributed among the students as a part of their regular training in shop work.

Responsibility for ordering, storing, issuing, and accounting for supplies and equipment

Table 41, page 78, shows that 254 teachers, or 62 per cent of the respondents, have no responsibility for ordering, storing, issuing, and accounting for supplies and equipment to other industrial-arts teachers. This seems to indicate that the majority of the teachers have the proper privilege and adequate facilities for taking care of such duties for their own shops. Most of the teachers who indicated having the above mentioned responsibilities are,

Table 40. Industrial-Arts Teachers Distributed According to the Number of Hours per Week Required for Care and Maintenance of Tools and Equipment

Hours per week	Number of teachers	Per cent
10 - 11	18	4.42
8 - 9	18	4.42
6 - 7	24	5.90
4 - 5	160	39.31
2 - 3	141	34.64
0 - 1	46	11.30
Total	407	100.00
Mean	4.2	
Median	3.6	

Table 41. Industrial-Arts Teachers Distributed According to Responsibility for Ordering, Storing, Issuing and Accounting for Supplies and Equipment to Other Industrial-Arts Teachers in their School and/or School System

School unit	Number of teachers	Per cent
School	91	22.36
School system	41	10.07
School and school system	21	5.16
No responsibility	254	62.41
Total	407	100.00

undoubtedly, department heads.

Number of free periods per day available for class preparations

Table 42, page 80, shows that 327 of the 402 teachers reporting had one free period per day available for class preparations. Of the 54 teachers who reported having no free periods, six indicated that one period per day was used for department head duties while 15 department heads taught six classes per day. Four teachers had coaching assignments, two teachers performed production work in school printing, one teacher took charge of school locker maintenance, and one teacher acted as director of audio-visual aids and director of assemblies in lieu of having free periods.

Teachers assigned as the head of a department

One hundred and sixty teachers, or 39 per cent of the 407 respondents, indicated that they were the head of the industrial-arts department in their respective schools.

Table 42. Industrial-Arts Teachers Distributed According to the Number of Free Periods per day Available for Class Preparations

Number of free periods	Number of teachers	Per cent
0	54	13.43
1	327	81.34
2	19	4.73
3	2	.50
Total	402	100.00
None indicated	5	

Summary

A summary of the findings in this chapter will be presented in Chapter IV in order to avoid duplication of the data presented.

Chapter IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The data presented in the previous chapters of this study of the extra-curricular and non-teaching duties of industrial-arts teachers in Wisconsin will serve as the basis for the following summary statements, conclusions, and recommendations.

Summary

1. The purpose of this study is to survey the extent to which industrial-arts teachers in Wisconsin are assuming their responsibilities for extra-curricular and non-teaching duties.
2. The investigation was conducted with the hope that it might be of value to the following groups: 1) school administrative officers, by showing them what duties the industrial-arts teachers are performing in Wisconsin high schools; 2) teacher-education personnel, by indicating what studies should be offered and what experiences in extra-curricular activities should be provided; 3) prospective industrial-arts teachers, in helping them prepare for their profession.
3. This study was delimited to four designated phases of student activities in Wisconsin high schools. These

were: 1) subject clubs; 2) hobby clubs; 3) organizations related to school management; 4) school activities which teachers are required to supervise and/or attend after school hours.

4. The first step in the collection of data for this study was the development of a questionnaire for industrial-arts teachers of Wisconsin.
5. Approval of the study was obtained from the Wisconsin State Department of Public Insturction through a personal interview with Mr. Walter B. Senty, Assistant Superintendent, department of public instruction, in charge of industrial arts.
6. A parallel questionnaire for teachers of subjects other than industrial arts was developed for the purpose of forming a comparison of the data from industrial-arts teachers and teachers of other subjects. This objective was not fulfilled, however, because the relatively small number of cases received from teachers of any one specific subject other than industrial arts did not support a valid comparison.
7. The proposed questionnaires and a letter of transmittal to principals were submitted to the Oregon State College School of Education for review and for criticism by members of the writer's graduate committee. Selected graduate students also assisted with the questionnaires

by serving as a pilot group for responses.

8. The questionnaires were revised upon receipt of constructive criticisms and suggestions from the above mentioned persons.
9. The industrial-arts questionnaires were sent to thirty industrial-arts teachers for trial purposes and the questionnaires for teachers of subjects other than industrial arts were reviewed by a comparable number of Madison, Wisconsin teachers.
10. After final revision the questionnaires were mimeographed and the letter to principals was lithographed in preparation for distribution to teachers.
11. An Official School Directory for Wisconsin was obtained from the State Department of Public Instruction and high schools were selected from it which offered instruction in industrial arts.
12. A packet containing a letter to the principal (Appendix A), a set of questionnaires for industrial-arts teachers (Appendix B), an equal number of questionnaires for teachers of subjects other than industrial-arts (Appendix C), and a stamped envelope addressed to the writer, which was to be used for returning the completed questionnaires, was mailed to each of the selected high schools.
13. The letter to the principal briefly stated the purpose

of the study and requested his assistance in collecting the data and returning it to the writer.

14. Four hundred and seven (60 per cent) of the industrial-arts questionnaires and 412 (62 per cent) of the questionnaires from teachers of subjects other than industrial arts were received in completed form.

15. Ninety-six per cent of the industrial-arts teachers in Wisconsin have a Bachelor's degree and 31 per cent possess a Master's degree.

16. The industrial-arts teachers majored in 17 fields of study. Industrial arts ranked first with a frequency of 351 (86 per cent) followed by industrial education with a frequency of 47 (12 per cent). All of the industrial-arts teachers in Wisconsin are teaching in their major fields of study.

17. The majority of the industrial-arts teachers minored in one or more of the following: science, social science, English, mathematics. Science and social science were more frequent than those in the other two fields of study.

18. The industrial-arts teachers in Wisconsin have an average of 2.4 different preparations per day requiring an average of one hour per day for the preparation and organization of materials of instruction.

19. Three-fourths of the industrial-arts teachers have

from four to five shop classes per day and only 30 per cent teach classes in subjects other than industrial arts.

20. An average of four hours and 21 minutes per day is spent in teaching shop classes and 37 minutes per day in teaching other subject classes. The average length of time per day that industrial-arts teachers spend in teaching all subjects is four hours and 58 minutes.
21. An average of 4.2 hours per week (50 minutes per day) are required by the industrial-arts teachers for the care and maintenance of tools and equipment.
22. Three hundred and twenty-seven teachers, or 81 per cent of those reporting, indicated having one free period per day available for class preparations while 54 teachers (13 per cent) reported having no free periods.
23. The majority (62 per cent)of the industrial-arts teachers in Wisconsin have no responsibility for ordering, storing, issuing, and accounting for supplies and equipment to other industrial-arts teachers in their respective schools and/or school systems.
24. One hundred and sixty teachers (39 per cent) are the head of the department of industrial arts in their respective schools.

25. Industrial-arts shops organized for instruction on the unit basis are predominant in Wisconsin high schools, especially in those schools which have large enrollments. The limited general shop plan of organization is established generally in schools having enrollments under 500 pupils and is the most frequently accepted type of shop organization next to the unit shop for all sizes of schools. Comprehensive general shops are established in those schools which have enrollments up to 1,5000 pupils inclusive.
26. The unit shop classes, which range in average size from 10 for the smaller schools to 25.2 pupils for the larger schools, are practically the same size as the limited general shop classes, which range from 13.6 to 25 pupils. The comprehensive general shop classes range in average size from 14 to 29 pupils. Classes of subjects other than industrial arts range in average size from 15 to 33 pupils.
27. Approximately three-fourths of the industrial-arts teachers in Wisconsin are fulfilling their responsibility for extra-curricular and non-teaching duties.
28. The most frequently sponsored extra-curricular activities were those concerned with athletics, class sponsorships, Boy Scouts, and school clubs.
29. All of the industrial-arts teachers sponsor

organizations related to school management. The most frequently recurring activities of this type were stage crew clubs and those activities which involve the use of audio-visual aids. Approximately 90 per cent of the teachers are required to supervise and/or attend school activities after school hours.

30. Approximately one-third (30 per cent) of the industrial-arts teachers spent a median of one hour and two minutes per week on club and related activities; three-fourths of them spent a median of one hour and 42 minutes per week on school activities after school hours; over half (59 per cent) spent a median of one hour and 58 minutes per week on homeroom duties; one-third of them spent an average of two hours and nine minutes per week in supervising study halls; and over half (52 per cent) of the teachers spent a median of 55.4 minutes per week on cafeteria and/or hall duty.

31. One hundred and eighty teachers (44 per cent) worked an average of 7.7 hours per month at school on Saturdays or evenings without reimbursement. In considering that the amount of time spent ranges from a low of zero to three hours for 78 teachers (43 per cent) and as high as 44 to 47 hours for two teachers (one per cent), it is found that the average instructor spends a <u>median</u> of 4.4 hours per month at school without

receiving compensation.

32. Extra pay and/or a lighter class load were given most frequently to the industrial-arts teachers who performed duties connected with athletic events, dances, parties, and the sale or collection of tickets during out-of-school hours.

33. Personal experiences gained through participation in extra-curricular, hobby, and craft activities were listed most frequently as special qualifications for performing extra-curricular and non-teaching duties.

Conclusions

1. Comparisons of investigations are never to be relied upon completely since terms used in collecting and reporting the data vary and conditions are not controlled. Deductions made from studies can be recognized as little more than general trends until the various phases of industrial-arts work become standardized.

2. Actual teaching in the shop or classroom is but a small part of the teacher's work. In addition to preparing for instruction and doing shop maintenance work, the industrial-arts teachers in Wisconsin spend a considerable amount of time in performing: 1) administrative work in connection with homeroom activities,

curriculum planning, ordering supplies and materials, and preparing the budget; 2) guidance activities concerned with pupil conferences, reports, records, testing, and programming; 3) supervisory functions dealing with extra-curricular activities during and after school hours, for which some receive extra compensation.

3. There is a considerable variation in the amount of time which industrial-arts teachers require for duties such as the maintenance of tools and equipment.
4. The industrial-arts teachers in Wisconsin high schools are carrying a heavy load of extra-curricular and non-teaching duties. These teachers spend an average of 6.75 hours per day in teaching, preparing for instruction, and maintaining their shops. The majority spend 55 minutes per day performing homeroom and cafeteria or hall duties, as well as extra-curricular activities after school hours. Approximately one-third of the teachers spend 50 minutes per day supervising study halls and club activities along with taking care of work at school during the evenings or on Saturdays.
5. Personal experiences gained through participation in extra-curricular, hobby, and craft activities provide teachers with an excellent background for sponsoring school clubs and extra-class activities.

6. The industrial-arts teachers in Wisconsin are contributing substantially toward fulfilling the objectives of the entire school program. They are performing essentially the same extra-curricular and non-teaching duties as are performed by teachers of subjects other than industrial arts. They also participate in and sponsor activities of a technical nature for which they are particularly well prepared.
7. Assignments of extra-curricular and non-teaching duties to teachers should be based on evidence of teaching load, special qualifications and interest in the activities considered, and the quality of teaching in the classroom.
8. The industrial-arts teachers in Wisconsin are upgrading themselves professionally at a steady rate as evidenced by the fact that less than four percent of the teachers surveyed are without a Bachelor's degree. This compares favorably with Anderson's (3) report for Wisconsin of 7.4 per cent of the teachers without degrees in 1948. There are still some industrial-arts teachers in the technical high schools who do not have a degree but they have a possible equivalent in technical courses and trade experience.
9. Numerous investigations in the various states have shown that a baccalaureate degree is well established

as a standard minimum requirement for industrial-arts teachers.

10. A steadily increasing number of industrial-arts teachers in Wisconsin are finding it advantageous to obtain a Master's degree. Over 30 per cent of the present teachers have a Master's degree, as compared to 14 per cent reported by Anderson (3) for Wisconsin in 1948. This indicated a steady rise in the level of professional training of industrial-arts teachers in Wisconsin.

11. Professional education beyond the Master's degree is not deemed important for industrial-arts teachers occupying positions below the supervisory level in Wisconsin.

12. It appears that Wisconsin is not menaced by an industrial-arts teacher turn-over problem. Since the teachers have an average of 14 years of teaching experience, and an average of nine years of teaching in their present positions, one has reason to believe that they remain a long time in their positions or school systems. Compared with Anderson's report for 1948, when the industrial-arts teachers averaged 17.5 years of experience, the decrease of 3.5 years appears to be due in part to the recent expansion in the total educational program and the hiring of many additional

teachers. Since 20 per cent of the teachers have 30 or more years of teaching experience, their gradual retirement tends to lower the average for all of the industrial-arts teachers in Wisconsin.

13. It appears that the industrial-arts teachers in Wisconsin are quite adequately prepared to teach industrial arts because 86 per cent of them have majored in industrial arts and the remainder have majored in either industrial education or vocational education.

14. Evidence of professional preparation is indicated by the number whose teaching is in their major or minor fields of study. The fact that all of the industrial-arts teachers in Wisconsin are instructing in their major field indicates professional preparation for their present work, which on the average was reflected in their college courses started more than 14 years earlier.

15. It seems that the extra-curricular and non-teaching duties unrelated to industrial-arts activities leave the majority of the teachers with insufficient time to improve substantially the industrial-arts programs in the high schools of Wisconsin. There is little evidence of time being available for participation in industrial-arts contests and exhibits, open house activities, and industrial-arts clubs.

16. There has apparently been little change in the number of different daily preparations required of industrial-arts teachers. The average of 2.4 different preparations per day required of industrial-arts teachers in Wisconsin agrees with the findings of Carlile (12) in 1931 who reported that combinations of two and three industrial-arts subjects were most prevalent in the typical schools of Arizona.
17. There is a tendency for all types of classes to become larger as the size of the school enrollment increases.

Recommendations

1. As a result of the study it is recommended that: in the interest of more effective teaching and guidance, industrial-arts teachers be given the minimum amount of routine clerical and administrative work.
2. School administrators should encourage and foster student participation in drawing contests, industrial arts awards programs and fairs, and arts and crafts clubs by providing appropriate teaching assignments, class schedules and facilities.
3. Institutions preparing industrial-arts teachers should provide for, and require, active student participation in the extra-curricular and school management activities which are of greatest importance to future teachers.

4. School administrators should improve the school club programs through the assignment of qualified teacher sponsors and the allowance of sufficient time and facilities to insure their successful operation.

Recommendations for further study

1. A comparative analysis of the teacher load of industrial-arts teachers and teachers of subjects other than industrial arts in terms of extra-curricular and non-teaching duties.
2. A realistic analysis of the administrative, clerical, guidance, and school maintenance duties which are required of industrial-arts teachers.
3. A study of the extent to which industrial-arts teachers are participating in local, state, and national programs which raise the professional level of the teachers and foster the advancement of industrial-arts education.
4. A study of the factors which promote job satisfaction and inspire a desire for advancement and tenure in the field of industrial arts.
5. Investigation of the nature and the degree of preparation which teacher education schools furnish industrial-arts graduates for assuming extra-curricular and non-teaching duties in the high schools.

6. A survey of the industrial-arts teacher's evaluation of the courses offered by teacher education schools which satisfy the requirements for advanced degrees.

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A P P E N D I X

APPENDIX A

EAST HIGH SCHOOL
Dept. of Industrial Arts
Madison, Wis.

B. R. Porter

March 31, 1959

Dear Principal,

Enclosed herewith are two sets of questionnaires prepared for the purpose of determining the extracurricular and non-teaching duties of Wisconsin industrial-arts teachers and comparing such duties with those of teachers of other subjects.

Would you be willing to distribute the "Questionnaire For Teachers of Subjects Other Than Industrial Arts" to teachers of several different subjects, including science? Please distribute the other questionnaires to your industrial-arts teachers. I would appreciate your having the teachers return the completed questionnaires to your office for bulk mailing to me in the enclosed self-addressed stamped envelope.

Mr. Walter B. Senty, Assistant Superintendent, Department of Public Instruction, in charge of industrial arts for Wisconsin, has expressed interest in this study and has approved the questionnaires. It is hoped that the completed study will be of real value in improving the teaching of industrial arts in Wisconsin.

No attempt will be made to identify persons or schools in the treatment of the data.

Thank you, sir, for your consideration and assistance.

Sincerely yours,

(Signed)
BERNARD R. PORTER

BRP/jes
Encls.

APPENDIX B

WHAT ARE THE EXTRACURRICULAR AND NON-TEACHING DUTIES OF INDUSTRIAL-ARTS TEACHERS IN WISCONSIN?

This study is designed to determine the extracurricular and non-teaching duties which are included in the average load of industrial-arts teachers in Wisconsin. It is undertaken to ascertain the amount of daily preparation required for teaching industrial arts, the extra compensation, if any, for extracurricular and non-teaching duties, the trends in the qualifications required for industrial-arts teachers to perform such duties, and to compare teacher preparation and time required for such duties of industrial-arts teachers with that of other teachers in Wisconsin. By cooperating in this study you will assist in promoting adjustments in teacher assignments which will result in more effective teaching.

QUESTIONNAIRE

Section I. Personal Data

A. Name (optional)_____

B. Marital status? Single ___, Married ___, No. children__

C.

College or university attended	Degree earned	Major field (IA, Eng., etc)	Minor field

D. Are you teaching subjects included in your major field?

Yes ___, No ___; Minor field? Yes ___, No ___.

E. Number of years taught (including this year) ____.

F. Number of years in your present position (including this year ____.

G. Present salary (check appropriate salary group):

Under $3,600	____	$5,001 - 5,500	____
$3,601 - 4,000	____	$5,501 - 6,000	____
$4,001 - 4,500	____	$6,001 - 6,500	____
$4,501 - 5,000	____	Over $6,500	____

H. Size of community in which your school is located:

Rural	___	1,501 - 2,500	___	10,001 - 20,000	___
100 - 500	___	2,501 - 5,000	___	Over 20,000	___
501 - 1,500	___	5,001 -10,000	___		

I. Total enrollment of your school:

Under 100	___	501 - 700	___	1,101 - 1,500	___
101 - 300	___	701 - 900	___	1,501 - 2,000	___
301 - 500	___	901 - 1,100	___	2,001 - 3,000	___

Section II. Data About Your Teaching Job

A. Are you the head of a department? Yes ___, No ___.

B. Check all the grades which you teach

Elementary	___	9th grade	___	12th grade	___
7th grade	___	10th grade	___		
8th grade	___	11th grade	___		

C. Check the type of shop(s) in which you teach

Unit shop ___

Limited general shop (Gen.WW, Gen.Drawing, etc.) ___

Comprehensive general shop ___

D. Other subject(s) which you teach: _____

E. Circle the number of periods you teach shop subjects each day 1 2 3 4 5 6 7

F. Circle the number of periods you teach other subjects each day 1 2 3 4 5 6 7

G. Circle the average length (in minutes) of each of your class periods: 45 50 55 60

H. Indicate the number of periods per day you teach in the following areas:

1. Drawing	___	7. Printing	___
2. Woodwork	___	8. Aeronautics	___
3. Metalwork	___	9. Crafts	___
4. Machine shop	___	10. Limited general shop	___
5. Auto mechanics	___	11. Comprehensive general shop	___
6. Electricity	___	12. Others __ (please list below)	

_____

I. Indicate by subjects, under the appropriate category, the average number of pupils per day in each of your classes

Unit shop		Limited general shop		Comprehensive general shop		Other Subjects	
Subject	No.	Subject	No.	Subject combination	No.	Subject	No.
Total							

J. How many hours per week do you supervise study halls? ___

K. Circle the average number of hours per week which are required for you to care for and maintain tools and equipment in a satisfactory condition:

1 2 3 4 5 6 7 8 9 10

L. Are you responsible for ordering, storing, issuing, and accounting for supplies and equipment to other industrial arts teachers in your school? Yes ___, No ___: School system? Yes ___, No ___.

M. Indicate the approximate average number of hours per week which are required for ordering and checking supplies, preparing stock for class use, organizing materials of instruction, building shop models, and correcting tests, by circling the number below:

1 2 3 4 5 6 7 8 9 10

N. How many free periods per day do you have for class preparations? ____.

Section III. Data About Your Non-teaching Duties

A. What is the average number of hours per week that you spend in home room activities? ____ hours.

B. Check the following clubs and related activities in which you participate and indicate the amount of time per week required.

		Hrs. per wk.
Industrial-arts club	___	___
Ford industrial-arts awards program	___	___
Industrial-arts awards fair - Chicago	___	___
Hobby club	___	___
Others (please name) _____	___	___

C. How many hours per week do you have cafeteria and/or hall duty? ___ hours.

D. Name the school activities, such as athletic events, ticket sales or collection, school dances, play productions, etc., which you are required to supervise and/or attend after school hours.

_____

E. Indicate the average number of hours each week you are required to spend on school activities named in D. above by circling number:

1 2 3 4 5 6 7 8 9 10

F. What special qualifications, such as special courses and practical experience in industry, do you have for performing the extracurricular and non-teaching duties assigned to you?

_____

_____

G. How many hours per month are you required to work at school on Saturdays or evenings without reimbursement?

____ hours.

H. Check the method by which you are compensated for extracurricular (out-of-school hours) work in your school.

1. Extra pay ___ 3. Extra pay & lighter class load ___

2. Lighter class load ___ 4. Other ___, Specify _____

_____

Note:

The above questionnaire has been submitted with the cooperation and approval of Mr. Walter B. Senty, Assistant Superintendent, department of public instruction, in charge of industrial arts in Wisconsin. A resume' of the completed study will be forwarded to you upon written request to Bernard R. Porter, 153 Lathrop Street, Madison 5, Wisconsin.

Your assistance in providing information needed for this study is greatly appreciated.

BERNARD R. PORTER

APPENDIX C

QUESTIONNAIRE FOR TEACHERS OF SUBJECTS OTHER THAN INDUSTRIAL ARTS.

A study is being made of the extracurricular and non-teaching duties of Wisconsin teachers. This involves making a comparison of the teaching load of industrial-arts teachers with that of teachers of other subjects. By co-operating in this study you will assist in promoting adjustments in teacher assignments which will result in more effective teaching.

Section I. Personal Data

A. Name (optional)_____

B. Marital status? Single ___, Married ___, No. of children ___.

C.

College or university attended	Degree earned	Major field	Minor field

D. Are you teaching subjects included in your major field? Yes ___, No ___; Minor field? Yes ___, No ___.

E. Number of years taught (including this year) ___.

F. Number of years in your present position (including this year) ____.

G. Present salary (check appropriate salary group):

Under $3,600	____	$5,001 - 5,500	____
$3,601 - 4,000	____	$5,501 - 6,000	____
$4,001 - 4,500	____	$6,001 - 6,500	____
$4,501 - 5,000	____	Over $6,500	____

H. Size of community in which your school is located:

Rural	___	1,501 - 2,500	___	10,001 - 20,000	___
100 - 500	___	2,501 - 5,000	___	Over 20,000	___
501 - 1,500	___	5,001 - 10,000	___		

I. Total enrollment of your school:

Under 100	___	501 - 700	___	1,101 - 1,500	___
101 - 300	___	701 - 900	___	1,501 - 2,000	___
301 - 500	___	901 - 1,100	___	2,001 - 3,000	___

Section II. Data About Your Teaching Job

A. Are you the head of a department? Yes ___, No ___.

B. Check all the grades which you teach

Elementary	___	9th grade	___ 12th grade ___
7th grade	___	10th grade	___
8th grade	___	11th grade	___

C.

Subjects which you teach	No. of periods per day	Average no. of pupils per day

D. Circle the average length (in minutes) of each of your class periods: 45 50 55 60

E. What is the total enrollment in all the classes you teach? ____

F. How many hours per week do you have laboratory work in your classes? ____

G. How many hours per week do you supervise study halls? ____

H. Circle the average number of hours per week which are required for you to care for and maintain materials and equipment in a satisfactory condition:

1 2 3 4 5 6 7 8 9 10

I. Are you responsible for ordering, storing, issuing, and accounting for supplies and equipment to other teachers in your school? Yes ___, No ___; school system? Yes ___, No ___.

J. Indicate the approximate average number of hours per week which are required for ordering and checking supplies, preparing materials for class use, organizing materials of instruction, building instructional aids, and correcting tests, by circling the appropriate number:

1 2 3 4 5 6 7 8 9 10

K. How many free periods per day do you have for class preparations? ___/

Section III. Data About Your Non-teaching Duties

A. What is the average number of hours per week that you spend in home room activities? ____

B. Check the following types of clubs and related activities in which you participate and indicate the amount of time per week required:

		Hours per week
Subject clubs	____	____
Hobby clubs	____	____
Organizations related to school management such as student council, usher's club, etc. Please name _____		____

C. How many hours per week do you have cafeteria and/or hall duty? ____

D. Name the school activities, such as athletic events, ticket sales or collection, school dances, play productions, etc., which you are required to supervise and/or attend after school hours.

_____

_____

E. Indicate the average number of hours each week you are required to spend on the school activities named in D. above by circling the number:

1 2 3 4 5 6 7 8 9 10

F. What special qualifications, such as special courses and practical experience in industry or other fields, do you have for performing the extracurricular and non-teaching duties assigned to you? _____

_____

G. How many hours per month are you required to work at school on Saturdays or evenings without reimbursement?

_____

H. Check the method by which you are compensated for extra-curricular (out-of-school hours) work in your school.

1. Extra pay ___ 3. Extra pay and lighter class load ___
2. Lighter class load ___ 4. Other ___, Specify _____

Note:

Your assistance in providing information needed for this study is greatly appreciated.

BERNARD R. PORTER