

AN ABSTRACT OF THE THESIS OF

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Title--A Survey of Occupational Information Related to-----
-----Woodwork in Industrial Arts Classes-----

Abstract Approved: [REDACTED]
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Purpose of the Study

1. To determine the amount of occupational information related to the woodworking industries now being taught in woodworking classes located in or near those communities which are partially or wholly dependent upon wood for their livelihood.
2. To determine the amount of such related information which would be used by instructors in these communities if it were made available
3. To suggest means and methods of obtaining and using more of such related information

Method of Study

This study is concerned with occupational information given in the industrial arts woodworking classes of the public schools concerning the woodworking industries in or near the school community.

Questionnaires were sent to selected woodworking instructors in four states. Oregon and Washington were chosen as representatives of forestry areas in the United States. Iowa was chosen because it has almost no part in the lumbering industry. Wisconsin was chosen to represent a population where occupations are divided between agriculture, machine industries and wood processing.

Findings

1. This study concerns the occupational information included for instruction in the industrial arts woodworking classes of the secondary schools. The

questionnaire technique was used. One hundred forty-five questionnaires were sent out and 85 (58.6 per cent) were returned. The eighty-five teachers making returns taught in one hundred five schools.

2. The teachers were selected so as to give a representative sampling of schools in four states, Oregon, Washington, Iowa, and Wisconsin, to determine the emphasis given to information related to woodworking occupations.
3. Two-thirds of the schools were reported as having an enrollment of from 50 to 400 boys. The remaining number were schools with enrollments of 401 boys or more.
4. Woodworking courses are required in greatest frequency in the seventh and eighth grade levels.
5. Forty-two and five-tenths of the boys in school elect woodworking at any one time. More boys elect woodworking in Oregon and Wisconsin than in Iowa or Washington.
6. Woodworking is taught uniformly throughout the grades seven to twelve.
7. All of the teachers who are giving related occupational information seem to be using the percentage of time which is recommended by authorities for such instruction.
8. Nearly three-fourths of the teachers reported they gave occupational information in their classes.
9. Approximately all (92.9 per cent) of the teachers reported that they would give more information if it were available in usable form.

Recommendations

1. That all industrial arts teachers of woodworking devote from six to eight per cent of their total time to the giving of occupational information.
2. That manufacturing companies, insurance companies, manufacturer's associations, state and government agencies be approached to obtain charts, graphs, bulletins, and other forms of visual aids.
3. That a library be established with such books and magazines as may be obtained pertaining to woodworking vocations.

Permanent

A SURVEY OF
OCCUPATIONAL INFORMATION RELATED TO WOODWORK
IN INDUSTRIAL ARTS CLASSES

by

CASEY STACEY JONES

A THESIS


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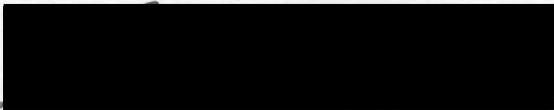
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A SURVEY OF
OCCUPATIONAL INFORMATION RELATED TO WOODWORK
IN INDUSTRIAL ARTS CLASSES

CHAPTER I

INTRODUCTION

This study is concerned with occupational information given in the industrial arts woodworking classes of the public schools concerning the woodworking industries in or near the school community.

A selected group of schools was chosen from the states of Iowa, Wisconsin, Oregon, and Washington, either because of their proximity to woodworking industries or because (for purposes of comparison) of their great distance from them. Table I, taken from a bulletin published by the United States Department of Agriculture, shows the volume of lumber produced by these states and is reproduced to verify the selection of the states for the study.

TABLE I

Lumber Produced by Four States in the Study

States	Volume of Lumber Produced (1000 ft. B. M.)		
	Soft wood lumber produced	Hardwood lumber produced	Total lumber produced
Iowa	5,889	5,887	11,776
Wis.	419,162	233,290	652,452
Oregon	4,351,723	23,106	4,374,829
Wash.	4,712,698	27,713	4,740,411

From the bulletin, United States Department of Agriculture. Division of forest economics, Washington, D. C., 1937. (Private correspondence)

A. Purpose of the Study

The author had these three principal purposes in making this study:

1. To determine the amount of occupational information related to the woodworking industries now being taught in woodworking classes which are in or near those communities that are partially or wholly dependent upon wood for their livelihood
2. To determine the amount of such related information which would be used by instructors in these communities if it were made available
3. To suggest means and methods of obtaining and using

more of such related information

B. Method and Procedure of Study

In order to obtain the information needed, a letter of transmittal and a questionnaire were formulated. Directories of teachers were obtained through the State Department of Education in the states of Iowa, Wisconsin, Oregon, and Washington, from which woodworking instructors were selected to receive the questionnaire.

A letter containing a letter of transmittal, two questionnaires (one for the teacher's own file), and an occupations card (also for his file) was sent to each of the instructors. All available literature was searched to ascertain the opinions of educational authorities on occupational information and its function in education.

C. Limitations

This study was limited to those factors which might have a direct bearing upon the information given by instructors about the woodworking industries in or near the community in which the instruction is given. The information tabulated in this study is particularly designed for woodworking teachers and school guidance workers.

D. Terminology

For the purpose of this study a few of the less common terms will be defined.

Occupational Information is a description of fields of vocational employment, written so that students may match their own interests and indications of abilities with the requirements of the vocations, and when so described may gain an insight into the work of the industry for general educational purposes.

Related Information is that information associated with the units of instruction considered important in a general way but not necessary for the pupil to know in order to perform the manipulative operations.

Industrial Arts is a branch of general education, primarily in the secondary schools, giving about four-fifths of class time to manipulative operations and the remaining one-fifth to related information.

Industry is a comprehensive term including all occupations connected with the growing, cutting, processing, and distributing of wood.

Occupation is a vocational pursuit in which one is gainfully employed.

E. Meeting the Needs of the Community

That woodworking courses may better meet the needs of the community, authorities in the field recommend that students should study the principal occupations of the school community. Such instruction gives the pupils information as an insight into these vocations, as well as an appreciation of the industries, that they may better understand their value to the community. Land says:
(8:292)

To instill punctuality, to arouse ambition, to increase a spirit of honesty, to develop self-reliance and self-respect, to infuse a willingness to learn and a willingness to work, to furnish instruction in health efficiency, accuracy and the fundamentals, to train in ability to use leisure time wisely, these are objectives which should be given more attention by those who are responsible for training for the industries. The boy will be benefited; industry will be aided; the school will have rendered a service to society.

Many of the needs of a community, when set forth and put in a teachable form, may well be interpreted to students by the industrial arts department of the public schools. Dewitt S. Morgan says: (10:46-47)

1. In the first place, the existing social and industrial order has brought about a condition which leaves the average youth wholly isolated from the world in which men do their work, and gives him no opportunity to observe the doings of such tasks as would give an incentive for achievement. . . .
2. Vital contacts are needed in order that

certain influential personalities of industry may be a power in re-enforcing the good influence of the school. . . .

3. There is need for very vital contact in order that the school may more effectively train for the demands of industry; and especially that for the pupil going from school to industry that a minimum of specialized additional training may be necessary in order to make him competent in a specialized task.

The industrial arts program in its infancy consisted of instructions in woodworking almost exclusively. History shows that it made a very steady growth in the United States, not only in communities where wood manufacturing industries were predominant, but in the agricultural districts as well. As the program grew, it found its way into the small schools which originally had felt that they could not support an industrial arts program. Emphasis on the teaching of related information has been encouraged in conjunction with the teaching of purely manipulative skills. It is usually agreed that about one-fifth of the total class time be given to the teaching of related information.

It is quite generally agreed that schools not located in woodworking districts should also give information related to those industries, for three reasons:

1. Statistics have shown that nearly eighty per cent of the pupils obtain employment as adults in a locality other than that in which they are educated.

2. It has been further shown that the teaching of related information contributes to the general educational background of the pupil.

3. It has been accepted that needs of the community have been neglected primarily because there has been no agency to bring the economic problems of industry to the attention of society in general. It is evident that occupational information should become a vital part of general education, to be included in the secondary school training program.

Nicholas Ricciardi corroborates this statement:

(15:49-50)

The need for 'linking' the modern high school with the occupational life of the community is being emphasized by school surveys which show that today only a small percentage of the young people who attend high school register in colleges or universities.

Charles A. Bennett has this to say about the teaching of related information: (2:32-34)

The master teacher is sure to make use of another means of teaching industrial arts--through related information. He will give orally or through the printed page, or better a combination of the two, such information as will enrich, but not take

the place of, the instruction given through the manual work. To experience, the pupil will thus add broader understanding through reading and perhaps through the radio, moving pictures, and visit to industries. His mind is led out into science and industry and life. Industrial arts in its various branches should and is coming to have a vital connection with other branches of school work and with life experiences.

F. The Objectives of General Education as Related to Occupational Information

The Educational Policies Commission in a recent publication sets forth five primary objectives reflecting modern concepts of education, one of which pertains directly to this study: (4:90)

III. The Objectives of Economic Efficiency

1. Occupational information
2. Occupational choice
3. Occupational efficiency
4. Occupational appreciation
5. Occupational adjustment
6. Personal economics
7. Consumer judgment
8. Efficiency in buying

At a time when there is some criticism of the industrial arts program, however small it may be, it is advisable for all industrial arts teachers to strengthen this program in every way possible. The objectives of industrial arts must and can assume a share of responsibility in the achievement of the above objectives of the

Educational Policies Commission; and woodworking, as the most popular industrial arts subject, must also assist. Occupational appreciation and occupational judgment are objectives to be stressed particularly in connection with the related information.

CHAPTER II

HISTORICAL BACKGROUND OF THE PRESENT INDUSTRIAL ARTS PROGRAM

Industrial arts is the term generally used for the shop classes in the secondary schools. Previously, the same field of training was known as manual training and later as manual arts.

The first shop work in the schools was called manual training because the emphasis was principally placed on developing skills in the use of hand tools. With the growth of manual training came the demand that it be broadened in scope of training; and, as a result, it came to be known as manual arts, which, although now considered an outmoded term, is still being used in some schools. In a Prospectus for Industrial Arts in Ohio we find: (13: Foreword)

The term 'manual training' and 'manual arts', though obsolete in the professional literature of Industrial Arts Education, still predominates in Ohio. This fact is regrettably true in several other states.

The terms manual training, manual arts, and industrial arts are well defined in the quotation from the same Prospectus for Industrial Arts in Ohio: (13:9)

Industrial Arts has had its greatest development on secondary school levels.

Here it has passed through two somewhat well defined periods of professional growth and is now in the midst of a third. The first was 'manual training' where the emphasis was on hand skill, chiefly in wood-working. The second was 'manual arts', where the emphasis, while still on skill, was extended to include the making of both useful and well designed articles. The third is now 'industrial arts', where the intent is to include all of the old that was good, but to broaden out from the limitations of an emphasis upon manual skill alone to an enriched conception where more of the child's interests and environments, and certainly many of the other school subjects, are involved.

Early Development of the Industrial Arts Program

The development of crafts was first taught in the home and was passed down from father to son, with the craft or trade remaining in the family for many generations. Sometimes a boy was placed as a pupil of a craftsman, to undergo a long apprentice training program.

Charles A. Bennett says: (1:14)

The fact that down to the beginning of the factory system in the nineteenth century the apprentice left his father's home and went to live with his master, or his maintenance was paid for by the master, is proof of the persistence of this idea of paternal relationship between master and apprentice.

Industrial Arts and Modern Education

The industrial arts program has been strengthened

somewhat because of the demands from the public and from industry. Many authorities are of the opinion that general education has failed to give instruction satisfactorily interpreting the new philosophy of education for the masses in a democracy.

Kilpatrick says: (6:20)

The first outstanding demand arises from the increasing failure of the formal part of education . . . The child of fairly well-to-do parents has little first-hand acquaintance with essential economic processes . . . (The home) is not the educative influence it once was as an agency either for inducting the child into industrial activity, or for giving him insight into the basic economics--social processes for building in him those cooperative moral-social attitudes and habits that underlie social life.

There is further evidence that greater effort should be made in order that the school may have its share in the solution of social and economic problems. Dewey says:

(3:20)

Study of mental life has made evident the fundamental worth of native tendencies to explore, to manipulate tools and materials, to construct . . . When exercises which are prompted by these instincts are a part of the regular school program, the whole pupil is engaged, the artificial gap between life in school and out is reduced . . . Without something of this kind, it is not possible to secure the normal estate of effective learning; namely, that knowledge-getting be an outgrowth of activities having their own end instead of a school

task . . . Aside from the fact that active occupations represent things to do, not studies, their educational significance consists in the fact that they may typify social situations.

Further evidence of change in the recent philosophy of general education as it applies to industrial arts is well stated by William Newsom, Langfelt, R. Emerson and others in the following: (11:1-2)

Educators who adhere to the first school of philosophy believe that it is the business of the school to help the pupil to become adjusted to that mode of living which society has found most acceptable, and also to develop in him the capacity for readjustment to those social changes he will most likely meet in maturity. In order to accomplish these ends, of course, adult standards must automatically be imposed upon the behavior of youth. Herein lies danger of an indoctrination of which dictators or vested interests of any sort may be quick to take advantage. On the other hand, this philosophy offers less opportunity for a type of educative practice which goes everywhere and gets nowhere.

Advocates of this philosophy usually maintain that society can best be served when each of its members is contributing his best efforts, and that an individual's efficiency increases in direct proportion to his interest in and his ability to carry forward an activity. Such a premise as this automatically places upon the secondary school the responsibility for developing the natural abilities, aptitudes and interests of each individual in harmony with the society which supports that school.

The second philosophy is the basic doctrine of the more progressive educators. Pro-

ponents of this philosophy are interested not primarily in transmitting the social heritage as a means of interpreting the present social order, but in conditioning the mind toward the construction of a new social order, which they feel is already evolving. With this ultimate goal in view, they maintain that the pupil should determine his own curriculum and select his own activities in the light of his immediate interests and needs, and that the teacher's function should be largely that of an interested participant. In support of this premise, they contend that the experience gained in acquiring knowledge is of paramount importance and not the acquisition of the knowledge itself.

The principle of freedom dominates the whole philosophy of this second school of educational thought. Its members are definitely opposed to the imposition of adult standards upon the pupil and they believe that each pupil should be free to develop both his individuality and his personality through his own self-initiated and largely self-directed activities. They also maintain that the individual should evaluate his efforts in the light of his own standards rather than according to any commonly accepted set of standards.

The rigid application of either of these philosophies quite obviously will result in the organization of either a modern or an ultra-progressive type of school. While it is quite evident that the school must take a more active and progressive attitude than it has in the past if it ever hopes to have any direct influence upon society, at the same time educators must proceed judiciously before they attempt to put any philosophy into practical operation. In other words, the school must be sure that its preachment is consistent with its practices if it ever hopes to serve or remake the society which supports it.

Related Information

The teaching of related information is made easier by the use of pamphlets, charts, games, assigned topics, and carefully chosen speakers with specific topics.

These are suggestions made by Harold M. Gray: (5: 101-103)

Lectures may be given by the instructor or some other individual who is either an authority or who is very familiar with the subject in question. Each has its advantages, when a need arises for it. When an outside individual is to give the lecture, the instructor should see to it that he has an outline of the points to be emphasized before-time so as to insure adequate and time saving delivery.

The group of instructional aids known as visual aids have come to be a very important method of conveying certain types of information to pupils. Aids which come under this head are motion pictures, photographs, charts, drawings, display boards, slides, dramatizations Published material such as bulletins and pamphlets often contain some very valuable related information. Such material can usually be gotten free of charge from companies and manufacturing establishments and from state and national government. Information gotten from them has usually been compiled by experts as a result of some research that has taken place; therefore, most of it is authoritative.

It is recognized that students ought to learn something of the skills, techniques, and habits of using

common materials and tools as well as to receive information about the related occupations. Theodore Struck says:
(14:179)

In many instances, especially in the case of city-reared youths, young people get their first chance to develop useful physical skills in industrial arts laboratories. It is here that they learn to work strenuously, creatively, and cooperatively on projects that call for sustained manual work. These habits of using common materials and tools, and of working constructively in cooperation with others, represents not only worth while pre-employment training and habit formation useful in modern industry, but experiences that are valuable toward preserving and perpetuating democracy in a war-torn and distracted world.

In many cities today, the students are taken from the classroom and placed in industry to assist in the defense training program. This most recent problem for education is described by Henry J. Roesch, who says:
(16:182)

Due to the terrific expansion of industry in the defense program and a consequent labor shortage, it is necessary to induct into industrial employment many high school students who have never been employed before. These young men through economic forces, have developed in many instances an attitude which lacks the recognition of their personal responsibility. It is the experience of industry that they lack the proper attitude toward the responsibilities of their job. It is necessary, then, that their attitude be changed. They must be sold on the idea that they, as individuals, are as important in our national defense

as the man who pilots a plane, drives a tank, or shoulders a rifle.

It would seem doubly important that the industrial arts program be expanded to meet the present day demands of the defense industries.

E. J. Lake and S. J. Vaughn state: (7:28-29)

There seems to be an impression among some that when we speak of modernizing and liberalizing manual training that we have in mind the total destruction of all organization, all system, all discipline, and all pedagogy. When it is proposed to substitute something vitally needed and something interesting from the boy's point of view for the cut-and-dried models, there is a genuine fear on the part of a few that the sacred and inherited principles of pedagogy are endangered.

The suggestions for modernizing manual training by making it expressive of the life and conditions of the times is in line with the best thought and practice not only in manual training but in the academic fields as well. The modern movement is toward the investment of manual training with thought content; the working out of problems that have a real bearing on life interests; the using of tools of industry because there is an important job to be done, not the doing of a useless job because there are important tools to be used.

Lake and Vaughn say in the same publication:

(7:28-29)

There is evidence in every convention exhibit that the old fashioned manual training is still struggling to survive. One can still see rows of sleeveboards,

coat hangers, book racks, and footstools of exactly the same dimensions and design that we of the older generation used as "models" twenty-five or thirty years ago.

They are not necessarily bad in themselves, if they serve the present purposes well, but the absolute uniformity lays them open to the suspicion that the old, discarded theory of manual training prompted their construction rather than any purpose to meet a definite need or to furnish some industrial information.

It was this defect that drove manual training into the background and brought industrial arts courses into the public schools. Other aims, in addition to skill, have come to be recognized in the shop work. Individual initiative, industrial information, knowledge of materials, methods of production, means of distribution, and numerous other considerations have now found places in the industrial arts courses. Thus enriched, such courses have met the criticism of the opponents of practical shop work in the public schools. It is well for a teacher to carry over all that is good in the old manual training into the enriched and vitalized field of industrial arts work.

The revision of existing industrial arts curricula must recognize the modern philosophy of education and include the newer objectives pertaining to the representation of real life situations.

Maris M. Proffitt says: (12:231-234)

Sound principles of curriculum construction demand that for the development of any specific knowledge, instruction be organized in the kind of learning experiences that most closely relate

to the life activities to which the particular knowledge appertains. Educational situations in a well-organized curriculum area in industrial arts, such as those included in the school shop, the school laboratory of industries, observation trips to industrial plants, and related readings provide logical and effective learning experiences for phases of social science subjects that deal with industrial life.

It may be categorically stated that industrial arts work is to be regarded as an essential in the modern school curriculum because:

1. It represents a large field of human activities.
2. It relates to fundamental types of human experiences that are universal, and consequently makes an appeal to all pupils.
3. It is based upon the natural tendency to manipulate material things.
4. It provides opportunities for self-expression in concrete media. Opportunity for self-expression is an essential in the learning process. Industrial arts provides this opportunity through the media of construction material and tools. The pupil deals with spatial relations, which is one of the most fundamental facts of consciousness; he works with three-dimensional materials; and he develops his aesthetic feelings toward the use made of the principles of design and color.

In conclusion, attention is called to the fact that every civilization has had

its dominant elements. In Greece the dominant elements were art and language. In these activities the Athenian citizen worked assiduously. In Rome it was law and government, and the free Roman citizen perfected himself in these social-civic functions. The dominant element in our civilization is industry, in which the machine, together with the power which operates it, is conspicuous. Industry and the machine are largely determining our social order. No man can claim to be cultured in his civilization who neglects to study its dominant elements, with its resulting social pattern. Attitudes of mind and forms of behavior that may be realized through proper provisions in industrial arts are essential not only for developmental experiences related directly to activities in industrial life, but for a claim to culture.

As the industrial arts program is now conducted, manipulative activities are greatly emphasized and must continue as the predominating proportion of instruction to assure retention of pupil interest. However, a program which includes no related information accomplishes only a part of the objectives. The time allotted for industrial arts should be so divided that proper emphasis on both the manipulative aspect and seat work may be assured. What is the proper division of time? Authorities agree in general that in the beginning courses a fifth of the industrial arts class time should be given to related and occupational information. They also recommend that the information be of three types:

- (1) technical information, (2) related information, and
- (3) guidance information.

The commonly accepted methods of presenting information are by lectures, demonstrations, home assignments, reading, and recitations; and by visual aids, such as pictures, graphs, charts, industrial trips, film slides, and moving pictures.

The industrial arts program seems to have well defined objectives as is shown by a highly respected authority in the field, Arthur B. Mays, who has this to say: (9:131-134)

. . . While there is undoubtedly much value in any well-taught shop work which involves correct methods of construction and design, it is questionable whether the large cost for such work can be justified if it stops with mere construction. And this takes us back again to the question of aims. A further study of various statements of objectives in manual arts work shows a very striking agreement on several important ideas, namely: (1) manual arts is not specifically vocational in purpose, hence trade skills are of minor importance; (2) appreciation of the work of the industries as they affect production and community and home activities is a chief aim; (3) first-hand knowledge of an experience in various tool processes and the methods of handling various important materials of construction, together with other information about occupations are desirable to aid a boy later to make an intelligent choice of occupation and to develop occupational interests; (4) the

manual arts must give opportunity for the development of initiative in dealing with the common problems of construction and the practical situations in life calling for a degree of manual skill and technical knowledge.

If these ideas are acceptable to most teachers as a part of the general objectives of manual arts, then how can we so enrich our courses as to realize them in the shop? Clearly there are two methods of gaining information and experience of the desired kind in the shop: one by performing intelligently and carefully the manual work of the course, and the other by shop talks, the writing of essays, studying reference books, visiting factories and local construction operations, and by the use of shop and other technical texts. Neither of these methods alone will suffice and the failure of teachers to realize this has endangered this work.

CHAPTER III

RESULTS OF THE QUESTIONNAIRE STUDY

As previously stated, the questionnaire method of obtaining information was used. Questionnaires were sent to selected woodworking instructors in four states. Oregon and Washington were chosen as representative of forestry areas in the United States. Iowa was chosen because it has almost no part in the lumbering industry. Wisconsin was chosen to represent a population where occupations are divided between agriculture, machine industries, and wood processing. The questionnaires returned from the four states and the percentage of returns from each state are shown in the following table.

TABLE II
QUESTIONNAIRE RETURNS

States	Iowa	Wis.	Oreg.	Wash.	Total
Number sent	52	36	41	16	145
Number returned	38	22	19	6	85
Percentage returned	73.1	61.1	46.3	37.5	58.6

TABLE III
TYPES OF SCHOOLS AND PERCENTAGE OF EACH

Grades	1-6	1-8	Jr-Hi	Sr-Hi	6 Yr Sec	4 Yr Sec	Total
Iowa	0	0	16	16	3	11	46
Wis.	0	0	10	10	4	6	30
Oreg.	1	0	6	9	0	7	23
Wash.	1	0	3	1	0	1	6
Total	2	0	35	36	7	25	105
% of Total	1.90	0	33.33	34.29	6.36	23.81	

Table III gives the number of schools of each type represented in the survey. The greater number of these schools were junior high schools, senior high schools, and four-year secondary schools.

Of the 105 schools represented in the survey, only 6.36 per cent of the schools were of the six-year secondary type. The small percentage is probably due largely to the fact that six-year secondary schools are more common in smaller and more sparsely settled districts, while this survey included a greater number of districts with ten or more teachers in the school.

About an equal number of replies were received from the junior high schools as from the senior high schools.

TABLE IV
NUMBER OF BOYS IN THE SCHOOLS

Boys Enrolled	Number of Schools							
	Iowa		Wis.		Ore.-Wash.		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
50-200	10	29.4	7	35	9	34.6	26	32.5
201-400	9	26.5	11	55	9	34.6	29	36.3
401-600	7	20.6	1	5	4	15.4	12	15.0
601-800	5	14.7	1	5	3	11.5	9	11.2
801-1000	1	2.9	0	0	1	3.8	2	2.5
over 1000	2	5.9	0	0	0	0	2	2.5
Total	34	100%	20	100%	26	100%	80	100%

Eighty-five teachers responded, representing eighty-five communities and a total of 105 schools. A few of the teachers divided their time between industrial arts classes in two schools in the same community. Over two-thirds (68.8 %) of the schools had an enrollment of from 50 to 400 boys, as shown in Table IV, with about an equal proportion of enrollment in woodworking classes in schools with 50 to 200 boys as in schools with from 201 to 400 boys.

TABLE V

GRADE LEVELS AT WHICH WOODWORKING IS REQUIRED
IN SCHOOLS MAKING THIS REQUIREMENT

Grades Required	7th	8th	9th	10th	11th	12th	Total
Iowa	20	14	6	1	0	0	41
Wis.	14	13	6	3	0	0	36
Oregon	3	5	5	0	0	0	13
Wash.	5	5	2	0	0	0	12
Total	42	37	19	4	0	0	102
% of Total	41.18	36.27	18.63	3.92	0	0	100

Of schools in which woodworking is required, nearly half made this first requirement of seventh grade pupils. More than a third required it on the eighth grade level. No schools reported the first course in woodworking to be required above the tenth grade.

TABLE VI
PERCENTAGE OF BOYS IN SCHOOL
ELECTING WOODWORKING COMPARED BY STATES

% Elect Course	0-20	20-40	40-60	60-100	Enroll- ment Median	Total
Iowa	7	9	5	9	37.7	30
Wis.	1	5	8	3	46.25	17
Oregon	3	4	5	6	48.0	18
Wash.	2	2	2	0	30.0	6
Total	13	20	20	18	42.5	71
% of total	18.31	28.17	28.17	25.35		100

The medium number of boys in all schools electing woodworking was 42.5 per cent. Woodworking was elected by a larger proportion of the boys in Oregon and Wisconsin than in Iowa or Washington. This cannot be explained entirely by assuming a greater interest in the subject by boys in the Oregon and Wisconsin schools because of other factors, such as variety of elective offerings, etc.

TABLE VII
GRADE LEVELS ON WHICH WOODWORKING IS TAUGHT

Grade Level	5th	6th	7th	8th	9th	10th	11th	12th	Total
Iowa ^o	1	1	22	16	27	24	23	23	137
Wis.	0	0	14	15	20	20	13	12	94
Oreg.	1	1	7	9	17	16	14	15	80
Wash.	1	2	6	6	6	3	3	2	29
Total	3	4	49	46	70	63	53	52	340
% of Total	.88	1.18	14.41	13.53	20.59	18.53	15.59	15.29	100

^oRead: In Iowa schools studied, 1 woodworking class was reported as taught in the fifth grade, etc.

In both the elective and required courses in woodworking, there is relatively little variation in the numbers taking the course at the different grade levels above the sixth grade. It is evident from the composite data shown in Table VII that more woodworking is taught in the ninth grade than on any other single level.

Oregon is conspicuous for the low number of classes in woodworking on the seventh and eighth grade levels.

TABLE VIII

HOURS USED IN GIVING INFORMATION RELATING TO FIRST
SEMESTER WOODWORKING

Rel- Infor- mation	0 hrs	0-1 hr	1-2 hrs	2-4 hrs	4-10 hrs	10 hrs and up	Total
Iowa	3	1	2	8	11	12	37
Wis.	0	1	2	6	8	4	21
Oreg.	1	2	3	6	4	3	19
Wash.	0	0	0	2	2	2	6
Total	4	4	7	22	25	21	83
% of Total	4.82	4.82	8.43	26.51	30.12	25.30	100

Median: 5.29 hours.

A few schools reported (Table VIII) that they gave no information relating to the woodworking courses. The reason given by these schools was the lack of industries related to woodworking in the community. The median for the entire group surveyed is 5.2 hours given to information by the average class during the average semester. Assuming 90 hours to be the total instructional time for the typical course, the median of 5.2 hours is 6.8 per cent of the total time given to the imparting of all related information. Authorities in general recommend that about twenty per cent of the class time be used for giving the three types of information, technical, related, and occupational. If the recommended time given to infor-

mation is divided equally between the three types, the recommended portion for occupational information would be one-third of the twenty per cent, or six and two-thirds per cent. The median time given in actual practice by the schools studied was then close to the recommended time.

Table IX shows the number and the percentage of schools reporting that they gave occupational information relating to the woodworking industries in their community. Nearly three-fourths of the schools give such instruction. It is evident from the Table that more schools in the western states replied that they gave information than those in the central states.

TABLE IX

SCHOOLS REPLYING THAT OCCUPATIONAL INFORMATION WAS
GIVEN TO THEIR CLASSES

Replies	Yes	No	Total
Iowa	20	14	34
Wis.	16	5	21
Oregon	16	2	18
Wash.	7	0	7
Total	59	21	80
% of total	73.75	26.25	100

The results may indicate that teachers who have had training or teaching experience in or near woodworking areas gave more related information than those who have had their training or teaching experience in areas having few or no woodworking industries.

In Table X is shown the number and the percentage of schools in which teachers would make use of related information if more were made available.

TABLE X

SCHOOLS WHOSE TEACHERS WOULD USE MORE RELATED
INFORMATION IF IT WERE AVAILABLE

Replies	Yes	No	Total
Iowa	32	3	35
Wis.	22	0	22
Oregon	17	3	20
Wash.	7	0	7
Total	78	6	84
% of total	92.9	7.1	100

All but twelve teachers responded that they would use more informational material if it were possible to obtain it.

Question Eleven of the questionnaire asked: "If the instruction in elective woodworking courses were more closely associated with the woodworking industries of the

community, would more boys take the courses?" About half the teachers replied in the affirmative to this question, as is shown in Table XI.

TABLE XI

TEACHERS REPORTING AN ASSOCIATION BETWEEN STUDENT INTEREST AND INFORMATION RELATED TO COMMUNITY INDUSTRIES IN ELECTIVE WOODWORKING

Replies	Yes	No	Total
Iowa	15	18	33
Wis.	12	6	18
Oregon	5	13	18
Wash.	5	2	7
Total	37	39	76
% of total	48.68	51.32	100

The negative responses were only slightly greater than the positive responses. One teacher replied "no" to the question, explaining that the shop facilities were already crowded to capacity.

Woodworking Occupations in or Near the Communities and Information Given about Such Occupations

The latter part of the study is concerned with the actual occupations in the fields related to woodworking instruction. A list of 89 occupations, divided into seven categories, was included in the questionnaire.

TABLE XII
SUPPLYING RAW PRODUCTS

States	Occupations In or Near the Community		
	Average No. Schools Reporting	Per cent Schools Studied Reporting on Each Occupation	Per cent of Occupations Reported in or Near the School Community
Iowa	0	0	0
Wis.	4.5	20.5%	77.0%
Oregon	17.8	91.1%	100.0%
Wash.	4.9	81.7%	100.0%
Total Average	6.8	48.4%	69.3%

In Iowa no teachers reported the existence of occupations related to the supplying of raw materials in or near their community. In Wisconsin on each occupation in the category of those supplying raw products an average of 4.5 schools, or 20.4 per cent of the schools studied in the state, reported that 77 per cent of the occupations were in or near their communities. In Oregon, an average of 17.8 schools per occupation, or 91.1 per cent of the schools studied in the state, reported that 100 per cent of the occupations were in or near their communities.

In Washington an average of 4.9 schools per

occupation, or 48.4 per cent of the schools studied, reported at 69.3 per cent of the occupations were in or near their community. Nearly half the schools, then, were located in communities where men worked at two-thirds of the listed occupations related to the obtaining of raw forestry products.

The seven broad categories of occupations related to the woodworking industry and the specific titles of individual occupations classified under each of the seven are as follows:

- A. Supplying raw products
Timber fallers, fireman, rig-up-crew, scaler, loaders, rafters, boommen, cruising, rigging, buckers, chasers, donkey engineers, pilers
- B. Manufacturing raw products
Peeler, grader, sawyer, cut-off man, beater operator, wet-roll operator, shingle packer, millwright, green chain, shingle weaver, acid mixer, loader (lumber), digest operator, pole and post mfg., splitter, stacker, carriage operator, gang saw, crane man
- C. Manufacturing finishing materials
Fibre plants, kilns, veneer plants, 4-square plant, wood treating plant, plywood plant, planer mill, pressed-wood mfg., pattern shop, stave factory
- D. Manufacturing finished products
Piano factory, match factory, boat shop, toy factory, chair factory, box factory, furniture factory, sash and door shop, print shop, furniture repair shop, wood fuel mfg. (Presto-logs), handle factory, clothes pin factory, fiddle and violin shop, barrel factory, casket factory, research (new and improved wood products)

E. Carpentry

Framing carpenters, floor layers, lathers, finishers, cabinet shop, form setters, shinglers, paperhangers, painters

F. Distribution

Pressed wood (wholesale), pressed wood (retail), furniture store, salesman, lumber yard (wholesale), lumber yard (retail), Presto logs (wholesale), Presto logs (retail), hogged fuel and sawdust (wholesale), hogged fuel and sawdust (retail), wood yards

G. Specialties

Park attendant, novelties, tree doctor, wood curios, specialty factory, book binder, basket weaver, nylon products, fibre plant, tannery

An interesting analysis of the data in Table II and Table XII may be made to determine the validity of the study concerning the occupations in the four states. The United States Forestry Department reported the production of lumber in the four states in the order of Iowa, Wisconsin, Oregon, Washington in a ratio proportion of approximately 1 to 54 to 364 to 395. The teachers of these four states reported the occupations existed in their communities in a parallel sequence, Iowa, Wisconsin, Washington and Oregon, and also in a ratio of 0 for Iowa, 77 for Wisconsin, and 100 each for Washington and Oregon.

TABLE XIII
SUPPLYING RAW PRODUCTS

State	Occupations Reported as Studied		
	Average No. of Schools Reporting on Each Occupation	Percentage of Schools in State Report- ing on Each Occupation	Per cent of Occupations about Which Information Given
Iowa	3.8	10.0%	100.0%
Wis.	3.5	15.9%	100.0%
Oregon	1.3	6.8%	71.4%
Wash.	2.1	35.0%	100.0%
Total	2.7	16.9%	92.9%

In this table the most significant finding is the high percentage of occupations about which information is given. Although by a fairly small group of teachers in a total average of 2.7 schools per occupation, or 16.9 per cent of the occupations. In Iowa 3.8 schools per occupation, or 10 per cent of the schools studied in the state, reported that information is given concerning 100 per cent of the occupations listed.

Table XIII shows that only an average of 16.9 per cent of the teachers included information about the occupations related to the supplying of raw products; but those who do so studied an average of 92.9 per cent

of those listed. In Oregon, noted for its vast sources of raw materials, only 6.8 per cent of the teachers studied included instruction about such vocations. Those who did so included only 71.4 per cent of the occupations listed, in comparison to 100 per cent for the other three states.

TABLE XIV

MANUFACTURE OF RAW PRODUCTS

States	Occupations in or near the Community		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools Studied in the State Reporting	Per cent of Occupations Reported in or near the School Community
Iowa	.3	0.8%	21.1%
Wis.	4.4	20.0%	100.0%
Oregon ^o	11.2	56.0%	100.0%
Wash.	5.5	91.7%	100.0%
Total average	5.4	42.1%	80.3%

^oRead: An average of 11.2 schools on each occupation or 56 per cent of the schools studied in the state reported that 100 per cent of the occupations were in or near their community.

Nearly half (42.1 per cent) of the schools reporting (See Table XIV) said that 80.3 per cent of the occupations classified as concerned with the manufacturing of wood products were in or near their communities. In Iowa, only 0.8 per cent of the schools reported such occupations, and

but 21.1 per cent of the listed jobs were included in the group.

In the state of Oregon for each occupation listed, an average of 11.2 schools, or 56 per cent of those included in this study, said that 100 per cent of the occupations were in or near their community.

TABLE XV
MANUFACTURING RAW PRODUCTS

States	Occupations Reported as Being Studied		
	Average No. Schools Reporting on Each Occupation	Percentage of Schools Studied in State Reporting	Per cent of Occupations about Which Information Given
Iowa	2.1	5.5%	100.0%
Wis.	1.8	8.2%	73.7%
Oregon	1.2	6.3%	50.0%
Wash.	1.9	10.0%	100.0%
Total average	1.8	7.5%	80.9%

A comparison of Table XV with the previous table shows that very few schools (7.5 per cent) reported that they gave occupational information about the manufacturing industries; yet 80 per cent of the schools said that the occupations were in or near their community.

TABLE XVI
MANUFACTURING FINISHING MATERIALS

States	Occupations in or near the Community		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting	Per cent of Occupations Reported in or near the School Community
Iowa	5.1	13.4%	91%
Wis.	4.1	10.8%	90%
Oregon	6	31.6%	91%
Wash.	4.7	78.3%	100%
Total average	5	33.5%	93%

From the Tables XVI and XVII in the manufacture of finishing materials the per cent of occupations reported in or near the school community was exceptionally high in Washington (78.3 per cent) but low in the other states.

Ninety-three per cent of the occupations were checked as being in or near the school communities in 33.5 per cent of the schools programs studied, yet fewer than a fourth of the schools (23.9 per cent) gave information about 85.7 per cent of those occupations.

In Washington all the occupations were within the district of 78.3 per cent of the schools, but only a third of the schools reported studying these. Those who did

give such information included but 80 per cent of the list.

TABLE XVII

MANUFACTURING FINISHING MATERIALS

State	Occupations Reported as Being Studied		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting	Per cent of Occupations about Which Information Is Given
Iowa	6.9	19.2%	100.0%
Wis.	4.8	21.8%	90.0%
Oregon	4.0	21.1%	72.7%
Wash.	2.0	33.3%	80.0%
Total average	4.4	23.9%	85.7%

TABLE XVIII

MANUFACTURING FINISHED PRODUCTS

States	Occupations in or near the Community		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting	Per cent of Occupations Reported in or near the School Community
Iowa	6.4	16.8%	77.8%
Wis.	4.9	22.3%	76.5%
Oregon	5.2	27.4%	94.1%
Wash.	2.4	40.0%	76.5%
Total average	4.7	26.6%	81.2%

Tables XVIII and XIX indicate that about a fourth (26.6%) of the schools reported that 81.2 per cent of the occupations in the field of manufacturing finished products were in or near their school districts; but only 59.1 per cent were studied by 11.1 per cent of the schools.

TABLE XIX

MANUFACTURING FINISHED PRODUCTS

States	Occupations Reported as Being Studied		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting	Per cent of Occupations about Which Information Is Given
Iowa	3.4	8.9%	77.8%
Wis.	4.0	18.2%	70.6%
Oregon	2.0	10.5%	58.8%
Wash.	0.4	6.7%	29.4%
Total average	2.5	11.1%	59.1%

TABLE XX

CARPENTRY

States	Occupations in or near the Community		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting on Each Occupation	Per cent of Occupations Reported in or near the School Community
Iowa	24.5	64.5%	100%
Wis.	16.2	73.6%	100%
Oregon	18.4	96.8%	100%
Wash.	5.9	98.3%	100%
Total average	16.3	83.3%	100%

The building trades are necessarily a part of every community life; therefore Table XX shows that an average of 83.3 per cent of the schools in the states studied reported that each of the ten occupations classified as carpentry were in or near the community. From Table XXI, all the occupations were studied but by an average of only 42.8 per cent of the schools.

TABLE XXI

CARPENTRY

Occupations Reported as Being Studied			
States	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Report- ing on Each Occupation	Per cent of Occupations about Which Information Is Given
Iowa	12.3	32.4%	100%
Wis.	9.3	42.3%	100%
Oregon	8.8	46.3%	100%
Wash.	3.0	50.0%	100%
Total average	8.4	42.8%	100%

TABLE XXII

DISTRIBUTION

Occupations in or near the Community			
States	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Report- ing Each Occupation	Per cent of Occupations Reported in or near the School Community
Iowa	12.0	31.6%	63.6%
Wis.	6.9	31.4%	100.0%
Oregon	9.7	51.1%	100.0%
Wash.	4.4	73.3%	100.0%
Total average	8.3	46.9%	90.9%

An average of 46.9 per cent of the schools reported that 90.9 per cent of the occupations related to distribution were in or near the community; but Table XXII shows that only 20.4 per cent of the schools were giving information, or but 81.8 per cent of the ten types of work in this category.

TABLE XXIII
DISTRIBUTION

States	Occupations Reported as Being Studied		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting on Each Occupation	Per cent of Occupations about Which Information Is Given
Iowa	5.8	15.3%	72.7%
Wis.	4.0	18.2%	100.0%
Oregon	2.5	13.2%	72.7%
Wash.	2.1	35.0%	81.8%
Total average	3.6	20.4%	81.8%

TABLE XXIV
SPECIALTIES

States	Occupations in or near the Community		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Reporting on Each Occupation	Per cent of Occupations Reported in or near the School Community
Iowa	8.0	21.1%	100%
Wis.	2.6	11.8%	90%
Oregon	4.4	23.2%	90%
Wash.	2.7	45.0%	100%
Total average	4.4	25.3%	95%

Table XXIV shows that 95 per cent of the ten types of work classified as specialty wood occupation were in or near the communities of a fourth of the schools (25.3 per cent); but from Table XXV, only 14.3 per cent of the schools included but 82.5 per cent of the occupations for study.

TABLE XXV
SPECIALTIES

States	Occupations Reported as Being Studied		
	Average No. Schools Reporting on Each Occupation	Per cent of Schools in State Report- ing on Each Occupation	Per cent of Occupations about Which Information Is Given
Iowa	2.4	6.3%	70.0%
Wis.	1.4	6.4%	80.0%
Oregon	1.8	9.5%	80.0%
Wash.	2.1	35.0%	100.0%
Total average	1.9	14.3%	82.5%

TABLE XXVI
OCCUPATIONS IN OR NEAR THE COMMUNITY

	Average No. of Times Each Occupation Was Check- ed by Schools Reporting	Per cent of Schools Checking Each Occupation as Being in or near the School Community	Per cent of Occupations Reported in or near the School Community by Schools so Checking Them
Supplying Raw Products	6.8	48.4%	69.3%
Manfg. Raw Products	5.4	42.1%	80.3%
Manfg. Finishing Materials	5.	33.5%	93.0%
Manfg. Finished Products	4.7	26.6%	81.2%
Carpentry	16.3	83.3%	100 %
Distribution	8.3	46.9%	90.9%
Specialties	4.4	25.3%	95.0%
Total	7.3	43.7%	87.1%

OCCUPATIONS REPORTED AS BEING STUDIED

Supplying Raw Products	2.7	16.9%	92.9%
Manfg. Raw Products	1.8	7.5%	80.9%
Manfg. Finishing Materials	4.4	23.9%	85.7%
Manfg. Finished Products	2.5	11.1%	59.1%
Carpentry	4.8	42.8%	100 %
Distribution	3.6	20.4%	81.8%
Specialties	1.9	14.3%	82.5%
Total	3.1	19.6%	83.3%

TABLE XXVII
ALL PRODUCTS AND ALL SCHOOLS

	Average No. of schools Reporting on Each of 89+ Occupations	Per cent of Schools Reporting on Each of 89+ Occupations	Per cent of Occupations Reported in or near the School Community
Occupations in or near the Community	7.3	43.7%	87.1%
Occupations Reported as Being Studied	3.1	19.6%	83.3%
Per cent of Occupations That Are Studied	43.8%	44.9%	95.6%

An average of 7.3 schools on each of 89+ occupations or 43.7 per cent of schools in the study reporting had 87.1 per cent of the occupations in or near their school community.

An average of 3.1 schools reported studying each of the 89+ occupations, or 19.6 per cent of the schools reporting; and they reported that this study included 83.3 per cent of the occupations.

In summary, whereas there were 87.1 per cent of the occupations in the school communities, as reported by 43.7 per cent of the teachers, only 83.3 per cent of the occupations were studied and in only 19.6 per cent of the

schools. Nearly half the teachers were in communities where most of the occupations existed; yet fewer than a fifth of those teachers gave occupational information to the students about those vocations and, when they did so, included but four-fifths of the total number.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS

1. This study concerns the occupational information included for instruction in the industrial arts woodworking classes of the secondary schools. The questionnaire technique was used. One hundred forty-five questionnaires were sent out and were returned by eighty-five teachers (58.6 per cent made returns). The eighty-five teachers taught in one hundred five schools.
2. A sampling was made of schools in four states, Oregon, Washington, Iowa, and Wisconsin, to determine the emphasis given to information related to woodworking occupations.
3. Two-thirds of the schools were reported as having an enrollment of from 50 to 400 boys. The remaining number were schools with 401 boys or more.
4. Woodworking courses are required in greatest frequency in the seventh and eighth grade levels.
5. Forty-two and five-tenths of the boys in school elect woodworking at any one time. More boys elect woodworking in Oregon and Wisconsin than in

Iowa or Washington.

6. Woodworking is taught uniformly throughout the grades seven to twelve.
7. Of the teachers who are giving related occupational information, all of them would seem to be using the percentage of time which is recommended by authorities for such instruction.
8. Nearly three-fourths of the teachers reported that they gave occupational information in their classes.
9. Approximately all (92.9 per cent) of the teachers reported that they would give more information if it were available.
10. Teachers in nearly half of the schools, located in communities where men worked at more than two-thirds of the listed occupations, related to the obtaining of raw forest products, reported that only 16.9 per cent of the schools studied each occupation.
11. Nearly half of the teachers reporting that the occupations listed as manufacture of raw products were in or near their schools stated that an average of only 7.5 per cent of the teachers gave the pupils information relating to these

occupations.

12. In summary, 93 per cent of all the occupations were checked as being in or near the school communities in 33.5 per cent of the school programs studied; yet only 23.9 per cent of the schools gave information about 85.7 per cent of those occupations.
13. About one-fourth of the schools reported that about four-fifths of the occupations in the field of manufacturing finished products were in or near their school districts; but only about three-fifths of these occupations were studied by about one-tenth of the schools.
14. In Tables XX and XXI, which concern occupations listed as carpentry, there was a total average of 83.3 per cent of the schools reporting, whose teachers stated that 100 per cent of these occupations were in their communities; yet only 42.8 per cent of them reported that they gave the related occupational information. However, those who gave such information included all of the occupations in this category.

It is interesting to note that the fields of work concerned with carpentering were included

for instruction by a greater number of schools than for any other grouping of occupations.

15. The distribution of wood products was found in every community, as expected, but only an average of about half of the teachers reported all of the occupations in this category were in their communities. The one-fifth of the teachers reported as studying these occupations gave information about 81.8 per cent of them.
16. In summary, there were 87.1 per cent of the occupations in the school communities, as reported by 43.7 per cent of the teachers; but only 83.3 per cent of the occupations were studied and in only 19.6 per cent of the schools. Nearly half the teachers were in communities where most of the occupations existed; yet fewer than a fifth of those teachers gave occupational information to the students about those vocations. When they did so, they included but four-fifths of the total number.

Recommendations

It is recommended:

1. That all industrial arts teachers of woodworking devote from six to eight per cent of their total class time to the giving of occupational information.
2. That the industrial arts woodworking program in the junior high schools and senior high schools be so correlated that the proper amount of related information will be given and on the appropriate grade levels.
3. That plans be formulated to inform the public of the aims and objectives of the industrial arts program.
4. That a list of suitable topics connected with the woodworking classes be submitted to the English teachers for suggested theme assignments. Discussion topics may also be similarly suggested to teachers of social science.
5. That manufacturing companies, insurance companies, manufacturer's associations, state and government agencies be approached to obtain charts, graphs, bulletins, and other forms of visual aids.
6. That a few good films and slides pertaining to

woodworking occupations be purchased for use by the industrial arts department.

7. That a library be established with such books and magazines as may be obtained pertaining to woodworking vocations.

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Plummer
OLD RELIABLE BOND
FOR CONVEYANCE

APPENDIX

TABLE I
TYPES OF SCHOOLS

Iowa

Types of Schools	Grades 1-6	Grades 1-8	Jr-Hi.	Sr-Hi.	6 Yr Sec.	4 Yr Sec.	Total
No. of Schools	0	0	16	16	3	11	46
% of Total	0	0	34.78	34.78	6.52	23.91	100

Wisconsin

Type of Schools	Grades 1-6	Grades 1-8	Jr-Hi.	Sr-Hi.	6 Yr Sec.	4 Yr Sec.	Total
No. of Schools	0	0	10	10	4	6	30
% of Total	0	0	33.33	33.33	13.33	20.00	100

Oregon

Type of Schools	Grades 1-6	Grades 1-8	Jr-Hi.	Sr-Hi.	6 Yr Sec.	4 Yr Sec.	Total
No. of Schools	1	0	6	9	0	7	23
% of Total	4.34	0	26.09	39.13	0	30.43	100

Washington

Type of Schools	Grades 1-6	Grades 1-8	Jr-Hi.	Sr-Hi.	6 Yr Sec.	4 Yr Sec.	Total
No. of Schools	1	0	3	1	0	1	6
% of Total	16.67	0	50.	16.67	0	16.67	100

TABLE II

GRADE LEVELS ON WHICH WOODWORKING COURSES ARE REQUIRED
IN SCHOOLS MAKING THIS REQUIREMENT

Iowa

Grade Level	7th	8th	9th	10th	11th	12th	Total
No. of Schools	20	14	6	1	0	0	41
% of Total	48.78	34.15	14.63	2.44	0	0	100

Wisconsin

Grade Level	7th	8th	9th	10th	11th	12th	Total
No. of Schools	14	13	6	3	0	0	36
% of Total	38.89	36.11	16.67	8.33	0	0	100

Oregon

Grade Level	7th	8th	9th	10th	11th	12th	Total
No. of Schools	3	5	5	0	0	0	13
% of Total	23.08	38.46	38.46	0	0	0	100

Washington

Grade Level	7th	8th	9th	10th	11th	12th	Total
No. of Schools	5	5	2	0	0	0	12
% of Total	41.67	41.67	16.67	0	0	0	100

TABLE III

THE NUMBER AND PERCENTAGE OF PUPILS
ELECTING WOODWORKING COURSE

Iowa

% of Pupils	0%-20%	20%-40%	40%-60%	60%-100%	Total
No. of Schools	7	9	5	9	30
% of Total	23.33	30.	16.67	30.	100

Wisconsin

% of Pupils	0%-20%	20%-40%	40%-60%	60%-100%	Total
No. of Schools	1	5	8	3	17
% of Total	5.88	29.41	47.06	17.65	100

Oregon

% of Pupils	0%-20%	20%-40%	40%-60%	60%-100%	Total
No. of Schools	3	4	5	6	18
% of Total	16.67	22.22	27.78	33.33	100

Washington

% of Pupils	0%-20%	20%-40%	40%-60%	60%-100%	Total
No. of Schools	2	2	2	0	6
% of Total	33.33	33.33	33.33	0	100

TABLE IV

GRADE LEVELS ON WHICH WOODWORKING IS TAUGHT
AND THE PERCENTAGE ON EACH LEVEL

Iowa

Grade Level	5th	6th	7th	8th	9th	10th	11th	12th	Total
No. of Classes	1	1	22	16	27	24	23	23	137
% of Total	.73	.73	16.06	11.68	19.71	17.52	16.79	16.79	100

Wisconsin

Grade Level	5th	6th	7th	8th	9th	10th	11th	12th	Total
No. of Classes	0	0	14	15	20	20	13	12	94
% of Total	0	0	14.89	15.96	21.28	21.28	13.83	12.77	100

Oregon

Grade Level	5th	6th	7th	8th	9th	10th	11th	12th	Total
No. of Classes	1	1	7	9	17	16	14	15	80
% of Total	1.25	1.25	8.75	11.25	21.25	20.00	17.50	18.75	100

Washington

Grade Level	5th	6th	7th	8th	9th	10th	11th	12th	Total
No. of Classes	1	2	6	6	6	3	3	2	29
% of Total	3.45	6.90	20.69	20.69	20.69	10.34	10.34	6.90	100

TABLE V

HOURS USED IN GIVING INFORMATION RELATED TO
FIRST SEMESTER WOODWORKING

Iowa

Time Taught	0 hrs	0-1 hr	1-2 hrs	2-4 hrs	4-10 hrs	10 hrs & up	Total
No. of Schools	3	1	2	8	11	12	37
% of Schools	8.11	2.70	5.41	21.62	29.73	32.43	100

Wisconsin

Time Taught	0 hrs	0-1 hr	1-2 hrs	2-4 hrs	4-10 hrs	10 hrs & up	Total
No. of Schools	0	1	2	6	8	4	21
% of Schools	0	4.76	9.52	28.57	38.10	19.05	100

Oregon

Time Taught	0 hrs	0-1 hr	1-2 hrs	2-4 hrs	4-10 hrs	10 hrs & up	Total
No. of Schools	1	2	3	6	4	3	19
% of Schools	5.26	10.53	15.79	31.58	21.05	15.79	100

Washington

Time Taught	0 hrs	0-1 hr	1-2 hrs	2-4 hrs	4-10 hrs	10 hrs & up	Total
No. of Schools	0	0	0	2	2	2	6
% of Schools	0	0	0	33.33	33.33	33.33	100

Copy of the letter of transmittal:

Dear Sir:

Within recent years Industrial Arts has grown so fast that it is difficult for teachers in the field to determine the things most pertinent to the situation. It is a recognized need that a percentage of the teaching time should be given to related information, to properly meet the Industrial Arts objectives. What information, and how much time are open questions.

Because of a deep interest in developing and maintaining a high standard of work, a study is proposed to determine the amount and kind of related information which should be taught in industrial arts woodworking classes. Probably the most satisfactory way to obtain that information is from the teachers in the field.

We shall be anxious to learn your reaction to the questions enclosed. It is our hope that your interest in a study of occupational information related to woodworking will prompt you to give the few minutes required to record your preferences and the practices used in your shop. The information will be treated in a confidential manner. Names will not be used in the report.

An extra copy of the questionnaire and an "occupations card" are enclosed for your files. A summary of the findings will be made available to all who cooperate, as soon as the study is completed. Your cooperation will be appreciated.

Yours very truly,

C. S. Jones

Survey of Occupational Information Related to
Woodwork in Industrial Arts Classes

Please check the list of questions as accurately as possible:

- I. Name _____ School _____
- II. City _____ County _____ State _____
- III. Underline the type of school in which you teach:
(Grades 1-6) (Grades 1-8) (Junior High) (Senior High) (Six year secondary) (4 year high school)
Others _____
- IV. What is the approximate number of boys in your school? _____
- V. In which grades is woodworking required? _____
- VI. Where woodworking is an elective subject, about what per cent of the boys elect it? _____
- VII. Please check the grade levels in which woodworking is taught in your school.
- | | |
|-----------------|------------------|
| 5th grade _____ | 9th grade _____ |
| 6th grade _____ | 10th grade _____ |
| 7th grade _____ | 11th grade _____ |
| 8th grade _____ | 12th grade _____ |
- VIII. In your first semester course approximately how many hours (total for semester) is given to related information about specific occupations? (check one)
- None _____; less than one hour _____; one to two hours _____; two to four hours _____; four to ten hours _____; more than ten hours _____.
- IX. Does the occupational information which you give have any particular connection with the woodworking industries in your community?
Yes _____ No _____.

2. Survey of Occupational Information
Related to Woodwork in Industrial
Arts Classes.

- X. If more printed information related to woodworking occupations were available, would you make use if it? Yes _____ No _____.
- XI. If the instruction in elective woodworking courses were more closely associated with the woodworking industries of the community, would more boys take the courses? Yes _____ No _____.
- XII. On the following list of occupations related to wood-working, check those in or near your community. Under "others" please list any that were overlooked here but which are in your community.

(a) Supplying raw products.

1. Timber fallers.
 2. Fireman.
 3. Rig-up-crew.
 4. Scaler.
 5. Loaders.
 6. Rafters.
 7. Boommen.
 8. Cruising.
 9. Rigging.
 10. Buckers.
 11. Chasers.
 12. Donkey engineers.
 13. Filers.
 14. Others (please list) _____
-

(b) Manufacturing raw products.

1. Peeler. (paper mill)
2. Grader.
3. Sawyer.
4. Cut-off man.
5. Beater operator.
6. Wet-roll operator.
7. Shingle packer.
8. Millwright.
9. Green chain,

3. Survey of Occupational Information
Related to Woodwork in Industrial
Arts Classes.

XII. (Continued)

10. Shingle weaver.
 11. Acid mixer.
 12. Loader. (lumber)
 13. Digest operator.
 14. Pole & post mfg.
 15. Splitter.
 16. Stacker.
 17. Carriage operator.
 18. Gang saw.
 19. Crane man.
 20. (Others) _____
-

(c) Manufacturing finishing materials.

1. Fibre plants.
 2. Kilns.
 3. Veneer plants.
 4. 4-square plant.
 5. Wood treating plant.
 6. Plywood plant.
 7. Planer mill.
 8. Pressed-wood mfg.
 9. Pattern shop.
 10. Stave factory.
 11. (Others) _____
-

(d) Manufacturing finished products.

1. Piano factory.
2. Match factory.
3. Boat shop.
4. Toy factory.
5. Chair factory.
6. Box factory.
7. Furniture repair shop.
8. Sash & door shop
9. Print shop.
10. Furniture factory.
11. Wood fuel mfg. (Prestologs)
12. Handle factory.

4. Survey of Occupational Information
Related to Wood work in Industrial
Arts Classes.

XII. (Continued)

13. Clothes pin factory.
14. Fiddle & violin shop.
15. Barrel factory.
16. Casket factory.
17. Research (new and improved wood products)
18. (Others) _____

(e) Carpentry.

1. Framing carpenters.
2. Floor layers.
3. Lathers.
4. Finishers.
5. Cabinet Shop.
6. Form setters.
7. Shinglers.
8. Paperhangers.
9. Painters.
10. (Others) _____

(f) Distribution.

1. Pressed wood. (wholesale)
2. Pressed wood. (retail)
3. Furniture store.
4. Salesman.
5. Lumber yard. (wholesale)
6. Lumber yard. (retail)
7. Presto logs. (wholesale)
8. Presto logs. (retail)
9. Hogged fuel & sawdust. (wholesale)
10. Hogged fuel & sawdust. (retail)
11. Wood yards.
12. (Others) _____

(g) Specialties.

1. Park attendant.
2. Novelties.
3. Tree doctor.
4. Wood curios.
5. Specialty factory.
6. Book binder.
7. Basket weaver.
8. Nylon products.

5. V Survey of Occupational Information
Related to Woodwork in Industrial
Arts Classes.

XII. (continued)

- 9. Fibre plant.
- 10. Tannery.
- 11. (Others) _____

XIII. Now please go over the list and place a "G" before
each occupation about which you now give occupational
information.

XIV. If you are interested in the results of this survey,
check here _____.

Return this questionnaire, as soon as possible, in
the enclosed envelope, to

C. S. Jones
2601 - 23rd Street,
Everett, Washington.