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Educational Background and Industrial Experience of Industrial Arts Teachers in the State of Washington 1968-69

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EDUCATIONAL BACKGROUND AND INDUSTRIAL EXPERIENCE OF INDUSTRIAL ARTS TEACHERS IN THE STATE OF WASHINGTON 1968-69

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Industrial arts is considered a necessary and desirable part of general education by many authorities today. Especially is industrial arts considered important in such times of great technological change in our society.

E. A. Weaver stated that a professional person must:

> . . . Master the accumulated knowledge of the age in one special field, and acquire some skill in applying that knowledge to increase the comfort of man in the progress of industry . . . . (40:9).

The professional training of any teacher, no matter what his field of specialization, is very important. However, the required amount of educational background varies considerably between colleges and states. Mr. Paul H. Hanus, as early as 1908, stated the following:

> . . . His teacher's scholarship must be deep enough in some one field in order to enable him to reveal the sense of mastery, the intellectual enthusiasm and power to bring about results . . . . (21:103-104).

It may be said, more than in any previous period of time, that we have an industrialized economy. The effective teaching of industrial arts may have a direct bearing on the future economics and direction of our society. In this respect, Arthur B. Mays specified:

> . . . The effectiveness of any department of organized education depends upon the training, knowledge, and personality of the teachers employed to give instruction in that department . . . . (27:216).

It becomes evident that the industrial arts teacher needs to have adequate training in order to effectively prepare students to obtain desired skills along with the necessary related and technological information to accompany that skill. This may be accomplished if administrators hire people trained for the specific area in which they will teach, and not force unfamiliar areas upon the teachers. Professional training should be a prerequisite to any teaching situation. H. J. Smith stated that the most effective teaching is only by "Possession of some special knowledges and skills not required of those in other types of work" (36:8). He also stated that the "attainment of college preparation, standardized to a high degree, within a clearly defined area is necessary" (36:9).

A study specifically listing causes for dismissal was conducted by Erickson (15:51). He researched contested dismissals in the state of Washington through 1963 and found "incompetency" to be the major reason for dismissal.

This study attempts to investigate the area of professional training requirements and experience of the industrial arts teachers of the junior and senior high schools in the state of Washington.

I. THE PROBLEM

Statement of the Problem

This study was composed of the following basic problem: To determine the educational background and experience of the industrial arts teachers in the state of Washington. This can be determined by methods of investigation which will support or disprove the following hypotheses:

1. Less than 10 per cent of the teachers teaching in the area of industrial arts are doing so without at least a minor in this field.
2. Less than 10 per cent of the industrial arts teachers in the state of Washington have a vocational certificate or would desire to obtain one.

Purpose of the Study

It was the purpose of this study to survey previous education and experience of industrial arts teachers of the junior and senior high schools in the state of Washington for the 1968-69 school year. This was accomplished utilizing the survey method. This study was undertaken in order to gain knowledge as to the qualifications of present industrial arts teachers. On the basis of results obtained, conclusions were reached which may assist educators in evaluating teacher qualifications as well as their own industrial arts program.

Significance of the Study

The results of this study are significant to teacher-

training institutions, state departments of education, teachers and administrators.

The effectiveness of the industrial arts programs in junior and senior high schools in the state of Washington can be better analyzed when the results of the survey are taken into consideration. This study will contribute to the scope of research in the industrial arts area by evaluating a specific state program. If administrators realize the importance and significance of hiring persons specialized to teach a particular discipline, administrators can play a leading role in upgrading the quality of, not only industrial arts, but all disciplines offered in the public schools.

Limitations of the Study

The study is limited to the following:

1. Two hundred twenty-three industrial arts teachers randomly chosen by representative sampling in the state of Washington who teach in junior and senior high schools.
2. The questionnaire and library research material.
3. Opinions of authorities in providing information by which data can be interpreted.

II. DEFINITION OF TERMS

Industrial Arts

A part of general education. It derives its content from industry. It is a basic element of our culture, and has as its social purpose the greater understanding and better

control of the phenonema of industry (3:10).

Industrial Education

A general term applying to all types of education related to industry including industrial education, vocational industrial education (trade and industrial education), and much technical education (4:11).

Reimbursable Vocational Program

A class or curriculum offered through a public school, teacher-training institution or under contract--which is organized and conducted in accordance with the provisions of the state plan for vocational education and approved by the U. S. Office of Education. Such programs are eligible to receive funds from the state (from state and federal vocational education appropriations) to cover in part certain costs already incurred. Whether or not aid actually is received is immaterial (4:16).

Teacher Certification

The approval action, based on minimum standards adopted in the state, taken by legally authorized school authorities on the professional and technical qualifications of teachers (4:19).

Trade Experience

Practical experience in a trade or occupation, including operations, tools, processes, and technical

information (4:20).

Survey

The testing instrument used was the "survey method" utilizing a set of questions to be answered by the informant without the personal aid of an investigator, or enumerator. Usually, the questionnaire is sent out by mail, but it may be distributed in person. In either case, it is filled out by the person supplying the information (42:314).

III. ORGANIZATION FOR REMAINDER OF THESIS

Chapter II will present the certification requirements of the State Department of Public Instruction regarding certification for teachers of industrial arts. It will list the requirements for a minor and major in industrial arts at the colleges and universities in the state of Washington.

Chapter III outlines the methods and procedures used to investigate the qualifications of teachers presently teaching in the state of Washington in the industrial arts area. The survey method was chosen by the author as being the most effective means of acquiring the needed information. The construction of the survey is outlined in Chapter III.

Chapter IV presents an analysis of the data obtained from the respondents. This includes educational backgrounds, majors and minors, number of classes per day, trade experience, number of vocational classes being taught and whether

or not the teacher is vocationally certified.

Chapter V provides a summary of the study, conclusions reached, and recommendations made by the researcher.

CHAPTER II

REVIEW OF THE LITERATURE

A thorough review of books, bulletins, periodicals, and abstracts indicates that very little has been done in the investigation of the background and experience of industrial arts teachers throughout the United States. Review of literature also indicates that many investigations related to the measurement and prediction of teacher efficiency have been conducted, but few are related to specific areas of responsibility. No studies were found that related to the training of industrial arts teachers in the state of Washington.

In Chapter I, the investigator showed the importance of specialized training for effective teaching. This chapter will present: (1) the teacher-training programs of the colleges and universities in the state of Washington for industrial arts, and (2) the State Department of Public Instruction's requirements for industrial arts teachers.

The intent of this paper was to explore the educational backgrounds and industrial experiences of industrial arts teachers. One of the objectives was to see how many credits teachers had taken in specific areas of training in industrial arts. For purposes of comparison, it was necessary to include college requirement programs for major/minor degrees in

industrial arts in the state of Washington. Programs for the major/minor degrees follow:

I. INDUSTRIAL ARTS TEACHER-TRAINING PROGRAMS IN THE STATE OF WASHINGTON

Central Washington State College

There was no attempt to include the industrial technology degree requirements since this thesis is concerned with industrial arts. The following are the requirements of Central Washington State College for a major or minor in industrial arts.

TEACHER EDUCATION MAJOR (T/Ed) INDUSTRIAL EDUCATION MAJOR (BROAD AREA)

Qualifies for teaching secondary industrial education.

Major (63-65 credits)	Credits
T-IE 165, Engineering Drawing I	4
T-IE 250, Woodworking	5
T-IE 255, General Metals	5
T-Ie 269, Basic Electricity	5
T-Ie 270, Power Mechanics	4
T-IE 357, Welding and Forging	4
T-IE 430, Industrial Education	3
Physics 101, Introduction to Physics	4
Chem. 101 and 101.1, Survey of General Chemistry.	5
Math. 163, College Algebra	5
T-IE 375, Industrial Arts Design	3
T-IE 433, Industrial Education Laboratory Planning	2
Econ. 244, Introduction to Economics or Geog. 245, Economic Geography	5
Area of Concentration: (Select one group)	9-11
Group I--Woodworking:	
T-IE 448, General Wood Finishing	2
T-IE 450, Advanced Furniture Construction	5
T-IE 371, Shop and Tool Maintenance	2
Group II--Metals:	
T-IE 356, Sheet Metal	3
T-IE 455, General Metals II	5
T-IE 497, Individual Study.	2
Group III--Drafting:	
T-IE 365, Engineering Drawing II	4
T-IE 466, Architectural Drawing	4
T-IE 465, Descriptive Geometry	3
Group IV--Electronics:	
T-IE 374, Basic Electronics	4
T-IE 474, Intermediate Electronics	4
Elect from Math. 165 (3), Math 171.1 (4), Physics 163 (5) or T-IE 496 (2)	2-5
Group V--General List:	
Select from at least three of the above groups (I through IV)	10-11
	63-65

(7:147)

(T/Ed) INDUSTRIAL EDUCATION MAJOR

Qualifies for teaching secondary industrial education.

Major (45 credits)	Credits
Crafts	6
Select from Crafts 242, 243, 244, 245, 262, 347, 348.	
Art 170, Design	3
T-IE 165, Engineering Drawing I	4
T-IE 250, Woodworking	5
T-IE 255, General Metals	5
T-IE 269, Basic Electricity	5
T-IE 357, Welding and Forging	4
T-IE 375, Industrial Design	3
T-IE 430, Industrial Education	3
Electives from T-IE and/or Physics 162, Math. 163 Geology 247, Chemistry 181 and 181.1, Geography 245, Art 150	7

(T/Ed) INDUSTRIAL EDUCATION MINOR SECONDARY

Minor (22-23 credits)	Credits
T-IE 165, Engineering Drawing I	4
T-IE 250, Woodworking	5
T-IE 255, General Metals	5
T-IE 269, Basic Electricity	5
Elect from T-IE 356 (3), 270 (4), or 430 (3).	3-4
	22-23

(7:147)

University of Washington

The following are the requirements of the University of Washington Industrial Education both major and minor.

INDUSTRIAL EDUCATION

Teaching Major: Secondary School Emphasis

(54 approved credits required)

COURSES	CREDITS
Educ 180, 181 Industrial Education: Sketching and Technical Drawing (3,3)	6

		CREDITS
Educ 182	Industrial Education: General Shop . . .	5
Educ 280	Industrial Education: Fundamentals of Woodwork	3
Educ 281	Industrial Education: General Metalwork .	3
Educ 380	Industrial Education: Tools and Materials	2
Educ 383-384	Industrial Education: Woodworking Technology (3-2)	5
Educ 386	Industrial Education: Home Planning . . .	4
Educ 388	Selection and Organization of Industrial Education Subject Matter	3
Me 201	Metal Casting	1
Me 202	Welding	1
Me 203	Metal Machining	1
Me 312	Machine Tool Fundamentals	3
Art 253	Design and Materials (Industrial Arts Section)	3
Arch 105	The House	2
Approved Electives		12

ALSO REQUIRED

Educ 327	The Teaching of Trade and Industrial Education	3

Industrial Education Major: Elementary School Emphasis
(36 approved credits required)

COURSES		CREDITS
180	Industrial Education: Sketching and Technical Drawing	3
182	Industrial Education: General Shop	5
280	Industrial Education: Fundamentals of Woodwork	3
281	Industrial Education: General Metalwork . . .	3
383-384	Industrial Education: Woodworking Technology (3-2)	5
389	Industrial Education for Elementary Teachers. .	5
Approved Electives		12

Teaching Minor: Secondary School Emphasis
(26 approved credits required)

COURSES		CREDITS
Educ 180	Industrial Education: Sketching and Technical Drawing	3
Educ 182	Industrial Education: General Shop . . .	5

COURSES		CREDITS
Educ 280	Industrial Education: Fundamentsls of Woodwork	3
Educ 281	Industrial Education: General Metalwork	3
Educ 327	The Teaching of Trade and Industrial Educ.	3
Educ 388	Selection and Organization of Industrial Arts Subject Matter	3
Me 201	Metal Casting	1
Me 202	Welding	1
Me 203	Metal Machining	1
Me 312	Machine Tool Fundamentals	3
	(37:202)	26

Eastern Washington State College

The following are the requirements of Eastern Washington State College for a major and minor in industrial education. The Department of Industrial Education and Technology offers four options designed to meet the needs of industry and education. The production, technical design, construction, and teaching options are designed to prepare one for employment in industry in high level technical and supervisory positions, as well as to prepare teachers of industry and technical subjects for the junior and senior high schools and community colleges. The student's department advisor is responsible for approving his course of study for the major or minor. Division directors are responsible for approving substitutions in a major and/or minor within their own divisions. A minor of 15 credits is determined by the division director. (12:23)

BACHELOR OF ARTS WITH MAJOR IN INDUSTRIAL SPECIALIZATION

Basic Technology Core Required of All Majors

Eng. 208 Technical Report Writing	3	credits
*Mathematics	15	
I.T. 101 Introduction to Industrial Technology and Production	4	
I.T. 170 Introduction to Engineering Design	5	
I.T. 260 Wood Products and Processes . . .	4	
I.T. 282 Metalworking Technology	4	
I.T. 308 Electricity and Electronics . . .	4	
I.T. 322 Plastic Materials and Processes .	4	
Total	43	credits**

* Industrial Education students will take five (5) credits in mathematics.
**33 for Industrial Education students. See above.

MAJOR OPTIONS (Choose one)

Production

I.T. 336 Production Laboratory	5	credits
I.T. 337 Engineering Graphics and Design .	5	
Bus. 251, 252 Accounting Principles I, II	10	
Bus. 356 Cost Accounting	5	
Bus. 373 Electronics Data Processing I . .	5	
Bus. 421 Production Management	5	
Total	35	credits

Technical Design

I.T. 337 Engineering Graphics and Design .	5	credits
I.T. 340 Strength of Materials and Testing Laboratory	5	
I.T. 345 Technical Illustration	5	
I.T. 402 Casting and Machining of Metals .	5	
I.T. 405 Machine and Tool Design	5	
I.T. 410 Industrial Design and Experimentation	5	
Phy. 350 Elements of Photography	4	
Phy. 360 Advanced Photography	3	
Total	37	credits

Construction

I.T. 301 Construction Materials and Techniques	5	credits
I.T. 310 Industrial Finishing and Covering	4	
I.T. 335 Architecture	5	

I.T. 337 Engineering Graphics and Design . 5 credits
I.T. 340 Strength of Materials and Testing Laboratory 5
I.T. 462 Industrial Safety Engineering . . 4

Total . . . . 28 credits

Bachelor of Arts in Education With Major in Industrial Educ.
Basic Technology Core . . . . . 33 credits
Electives in Industrial Education and Technology 20
Other Approved Electives 7

Total . . . . 60 credits

(12:53,56,57)

Western Washington State College

The following are the requirements of Western Washington State College for a major and minor in industrial education.

Industrial Arts Teacher Education:

The student must complete an approved pattern of subject matter concentration totaling 65 to 75 credits in fields specifically related to the curriculum of the public schools of the state. The student's department advisor is responsible for approving courses of study from technologies and electives for both the major and/or minor (41:42).

Major Secondary--45 credits

Industrial Arts 101 - Orientation to Industrial Arts Technology
Industrial Arts 491 - Selection & Organization of Subject Matter
Industrial Arts 493 - The Teaching of Industrial Arts
36 credits distributed among three technologies

a. graphics (graphic arts, industrial design, drafting)
b. mechanical and electrical (power mechanics, electricity, electronics)
c. materials and processes (woods, metals, crafts, plastics)
These credits are to be distributed according to one of the following options:
(1) 24 credits in one, and 12 in another technology
(2) 18 credits in each of two technologies
(3) 12 credits in each of the three technologies

Minor--25 credits

Industrial Arts 101a - Orientation to Industrial Arts Techniques, Studies and Careers.
Industrial Arts 491 - Selection & Organization of Subject Matter in Industrial Arts or
493 - The Teaching of Industrial Arts
Electives under departmental advisement

(41:42,43,103)

Washington State University (Semester System)

A student seeking a university degree must organize his efforts in a particular department or a group of related courses. The student is assigned by the coordinator of the Curriculum Advisory Program to a faculty advisor in his area of interest. Washington State University does not list a minor.

Industrial Arts

There are two types of programs leading to the degree of Bachelor of Arts in Industrial Arts. The first gives a broad and carefully planned preparation for students who intend to teach industrial arts in the public schools. It gives a prospective teacher a sequence of courses in almost all of the major fields of industrial arts and comprehensive

combinations of industrial arts and unrelated fields. It also fulfills the requirements for the Provisional Certificate.

The second type of program prepares the student for entrance into industrial or commercial activities such as small manufacturing and business, contracting, representing manufacturers, and the installation, maintenance, sales, and service of industrial products. At least 27 of the total hours required for the bachelor's degree in these programs must be in upper-division courses.

Industrial Arts Education

Before undertaking this schedule of studies, it is recommended that as major preparation at the secondary school level a student should have completed Educ 101; IA 101, 110, 114, 201; Me 101; Psych 101. At least 4 semester hours should have been completed in a laboratory science such as Chem 101 or Phys 101.

Senior or Junior High School Major

Sophomore Year

First Semester	Hours
Educ 201 Human Development	4
IA 215 Metalworking II	2
IA 240 Elements of Elec	3
Phys 101 General	4
ROTC or elective*	2
PE	1/2

Second Semester	Hours
Educ 301 Teach in Sec Sch	4
IA 272 Basic Design	3

	Hours
IA 342 Radio Comm	3
Spe 112 Fundamentals	3
ROTC or elective*	2
PE	1/2

Junior Year

First Semester	Hours
IA 326 Adv Metalworking	2
Minor Electives*	4
Hum or Soc Elective*	6

Second Semester	Hours
Educ 401 or 402	3
IA 220 Ind Craft Processes	3
Minor Elective*	5
Hum or Soc S Elective*	6

Senior Year (Interchangeable Semesters)

First Semester	Hours
IA 333 Methods of Teaching	2
IA 420 Curriculum Materials	2
Minor Elective*	4
Hum or Soc S. Elective*	3
Elective*	4

Second Semester	Hours
Educ 403 or 404	3
H Ed 380 or 381	2
Educ 405 or 406	8
Elective*	2-3

Courses printed in Roman Type are required for graduation, those with an asterisk are optional.

There was no attempt to include the industrial arts: industrial-technical training degree requirements since this thesis is concerned with industrial arts. (39:16,160,161)

II. WASHINGTON STATE REQUIREMENTS FOR CERTIFICATION

The State Supervisor of Industrial Arts, Mr. Herbert Bell, and Dr. Donald Schliesman, Assistant to the Dean of Education, made the following statements in regard to the present requirements for certification in the state of Washington. Mr. Herbert Bell, speaking on certification standards states:

> . . . At the present time, no official position has been taken by this office except as outlined in the new certification standards which are based on performance instead of experience or credit counting. No colleges in the state, to my knowledge, except on the side have taken a real position as to granting industrial experience credit . . . . (6).

Information received from the Assistant to the Dean of Education at Central Washington State College:

> The only certification requirements that must be met at the present time are that a 45 to 60-hour major in one field must be obtained to teach full time in that field. A 20-hour minor is possible in some cases. A minor entitles the individual to teach 20 per cent of his teaching load in the minor field. These requirements are subject to departmental approval, and some departments set their standards higher. These requirements hold true, however, only for the first year of teaching. Then the superintendent or principal may decide, at his own discretion, where a teacher may or may not teach. Subsequently, the teacher may be placed in an area unfamiliar to him.
>
> There are, at the present time, no requirements after the first year of teaching to assure that the teacher is instructing within the area where he is qualified (34).

III. IMPLICATIONS

There is no specific state-wide program for the

training of industrial arts teachers. However, the programs have a distinct direction in all of the colleges and universities and are related in basic requirements. Options and allowances for student choice are permitted. A field such as industrial arts is not a stereotyped field. It is constantly changing. The positions available in the industrial arts field vary considerably. It is important that a training program not be tied to stringent, controlled curriculum.

The inclusion of such courses as Chemistry, Physics, Algebra, and various technical courses related to industry is considered to have been an important addition to the industrial arts curriculum. Industrial arts curriculum must enable industrial arts to keep up with the needs of the society for which it was designed (36:9).

Monroe, in speaking of the curriculum for teacher education states:

> . . . Good curriculum alone cannot make good teachers out of poorly selected persons; there is a basic need of more emphasis in the future upon a far more complete recruitment, selection, and follow-up, guidance program.
>
> It is timely to challenge tradionally set standards or practices on such matters as required courses, majors, minors, electives, etc..... (28:1387).

It is not enough for a teacher to be just well prepared to teach in a specific area. He must be constantly upgrading his skills and working toward self-improvement by continuing his education.

Industry trains and supervises people hired for

specific jobs. The school district administration, more often than not, expects a teacher just out of college to be well prepared and pass them off with little or no supervision. New teachers must receive good supervision as a first, second, and even third-year teacher (17).

Teaching is both a learning experience and a living experience. John Dewey challenged educators when he said:

> . . . We teachers must conceive of teaching in wood and metal, of weaving, sewing, and cooking, as methods of living and learning--not as distinct studies.
>
> We must conceive of them in their social significance, as types of the processes by which society keeps itself going, as agencies for bringing home to the child some of the primal necessities of community life, and as ways in which these needs have been met by the growing insight and ingenuity of man; in short, as instrumentalities through which the school itself shall be made a genuine form of active community life, instead of a place set apart in which to learn lessons . . . . (11:14).

Industrial arts should work with all areas of education if industrial arts is to develop maximum pupil ability. All students should be permitted to apply principles of math, science, mechanics, analysis and experimentation involving products, tools, materials and processes. The following is a statement taken from the Final Report of the Summer Study on Occupational, Vocational and Technical Education, Massachusetts Institute of Technology:

> . . . Through experimental laboratories, industrial arts offer those learning experiences which assist boys and girls to understand the industrial and technical aspects of life today. This curriculum area makes a realistic contribution to education as a process and shares with areas of the school the responsibility for

promoting the continuing development of the good citizen . . . . (26:46).

The following statement by Dr. Donald Maley, Department of Industrial Education, College of Education, University of Maryland, is appropriate:

> . . . I challenge our teacher education institutions to produce teachers who are capable of designing learning experiences rather than the predominant emphasis on "project designing" . . . . (25:1).

Dr. Orville W. Nelson had the following to say about education:

> . . . If education keeps up-to-date with contemporary technology, change in the educational realm should be systematic and sequential.
>
> Unfortunately, there are several built-in mechanisms that tend to keep educational programs behind contemporary technology and knowledge. Such things as the lack of communication between the two worlds of industry and education, the outlook of the teachers, and the financial status of our schools tend to create an educational lag. However, the single largest inhibitor of change in education would appear to be the framework or rationale that provides the justification for each educational program, establishes boundaries for course content, and guides the development of courses within curricula . . . . (29:1).

Mr. Herbert Y. Bell, Supervisor of Industrial Arts for the state of Washington made the following statement about the adequacy of preparation:

> A basic need facing the industrial education profession in Washington today is the adequacy of preparation. Not only are nonqualified college-trained, certified teachers teaching in the industrial education field, but many industrial education teachers can also be classified as undertrained. Few, if any, have training in industrial or construction activities recognized by teacher-training institutions. In other words, outside experiences are not considered important for a major in

> the industrial education field. One might then assume that practical experience is not necessary to understand the field from which industrial arts or industrial education takes its body of knowledge. We know many teachers have this experience and many others strive to attain it--some for monetary reasons, but few for educational opportunities. It offers a program that recognizes broad participation. A survey that assesses both the content and the practical application of these experiences as to the importance the individual teacher attaches to them could be of great benefit in determining future directions. This information could benefit industrial education in the preparation of teachers for tomorrow (6).

Powers had the following statement to make in regard to the type of survey this paper involves:

> . . . During the past fifty years well over a thousand studies related to the measurement and prediction of teacher efficiency have been made. Most of these studies have been of a broad nature with little attention given to teachers in a specific subject matter field . . . . (32:23).

Ensman quotes a study by Rumpf related to teaching performance, based upon ratings of 236 vocational-industrial teachers by local directors:

> . . . The study showed that education based on college credits had more of a bearing on teaching performance than did industrial training (6:21-22).

Ensman also quotes one of Senteney's conclusions:

> . . . Although over one-third of the graduates who were teaching, were teaching industrial education and another subject, many of these teachers indicated that a major source of the difficulties they encountered in connection with their jobs arose as a result of their being required to teach in these other areas . . . . (14:21).

IV SUMMARY

A comparison of course offerings of the colleges in the state of Washington for an Industrial Arts Degree shows

a leaway and variation of requirements in both the major and minor areas. The courses offered at the colleges and universities are numerous. As was pointed out by the requirements for the Industrial Arts Degree, the degree does include math, chemistry, physics, and various technical courses related to industry.

Mr. Herbert Bell, State Supervisor of Industrial Arts, stated that the basic need facing industrial arts in the state of Washington is adequacy of preparation. He also stated that training in industrial activities is not recognized by teacher-training institutes. At the present time, credit is not given for outside trade experiences. Mr. Bell stated that outside experiences could benefit industrial education in the preparation of teachers for tomorrow.

The State Department of Public Instruction has taken no official position on specific area training, other than the certification standards. Certification standards require a person to have at least a 45-credit major to teach full time in that area, and a 20-hour minor to teach 20 per cent of an individual's time in the minor field. These requirements only protect the teacher from being moved into an unfamiliar area for a period of one year--the first year of teaching. There is no ruling or legal control to protect the teacher or assure the student of instruction from a qualified individual.

CHAPTER III

METHODS AND PROCEDURES OF THE STUDY

The purpose of this study was to determine the previous educational training of industrial arts teachers in the state of Washington for the 1968-69 school year. This was necessary in order to gain knowledge as to the qualifications of present industrial arts teachers.

Before proving or disproving the stated hypotheses, it was necessary to determine the type of device to be used for collecting desired information. The survey method was deemed the most effective means of enabling the investigator to ascertain needed information. The results of the returned questionnaires were the basis for the present study. Questions used in the formulation of the questionnaire were compiled upon the basis of suggestions from authorities in the field of industrial arts. Aid in construction of the questionnaire was obtained from authorities located at Central Washington State College. The questionnaire was submitted for approval, corrections were made, and suggested additions were included.

It was the writer's desire to make the questionnaire easily read and easily completed to assure a better return. The questions were presented so that the respondents did not need to elaborate, but merely state a short response. Care was taken in phrasing and in arranging the question sequence,

so that the questions would not be misinterpreted and related questions would be together.

The letter that accompanied the survey stated the objectives of the survey. The form, itself, was its own stamped envelope with return address included (Appendix A).

Follow-up letters were sent to elicit responses from those failing to reply the first time (Appendix A).

The participants were selected by representative sampling. All persons listed in the State Industrial Arts Directory were assigned a number--then every third number was chosen. The State Industrial Arts Directory population was composed of all different sizes of schools, so a representative sample contained individuals drawn from each category in accordance with their size (19:206). The State Industrial Arts Association Directory was used to obtain the addresses of the schools to be contacted. The directory contained the total number of teachers teaching industrial arts--1,091. Of this number, 360, or approximately one-third of the total teaching population was selected through representative sampling. The 360 questionnaires were sent out, with a return of 223, or 62 per cent. This is a sample of slightly over 20 per cent of the total population.

The questionnaires were sent on January 20, 1969, after the first school semester had ended. This way, the respondents would be contacted at a more opportune time and

not during testing or grading periods. Sixty per cent, or 216 of the 360 were not returned by February 5. A follow-up letter was sent on February 5, 1969, to those not answering the first mailing. Eighty-nine additional questionnaires were returned by February 20, 1969. This brought the total returned to 234, or 65 per cent of the number mailed out during the first mailing.

The findings of the questionnaire were charted for easier interpretation. This way, the returns could be tabulated as they were received.

Of the 234 returned survey forms, 11 were considered invalid. This was because 5 respondents were teaching fully in vocational education, and 6 responses were incomplete. This left a total of 223 valid answers, or 62 per cent.

CHAPTER IV

ANALYSIS OF THE DATA AND FINDINGS OF THE STUDY

This study was designed to explore the educational background and experience of industrial arts teachers. The study was analyzed by the use of simple percentage and representative numbers. Each question was tabulated separately. In some cases, the average, or mean was determined if it was applicable. Sample comments on some questions were included to give an indication of the thinking in this field.

I. FINDINGS OF THE STUDY

Undergraduate Major/Minor in Industrial Arts

Of the 223 respondents, 176, or 79 per cent of the teachers teaching in industrial arts held a major in industrial arts. Eight per cent had a minor in industrial arts. The average number of credits for those holding a minor in industrial arts was found to be 36.83 credits. It was found that 13 per cent of the respondents presently teaching industrial arts had neither a major nor a minor in industrial arts. Therefore, the first hypothesis of this investigation has been disproved. The first hypothesis stated:

> Less than 10 per cent of the teachers teaching in the area of industrial arts are doing so without at least a minor in this field.

TABLE I

UNDERGRADUATE MAJOR/MINOR IN INDUSTRIAL ARTS

RESPONSES	NO OF TEACHERS	PER CENT OF TEACHERS TEACHING IN INDUSTRIAL ARTS
Major in industrial arts	176	79
Minor in industrial arts	18	8
Teaching in industrial arts without a degree in I.A.	29	13
Total	223	100

Number of Classes and Students Taught

As indicated in Table II, 4.31 was the average number of industrial arts classes taught by the 223 respondents per day. The average daily number of students taught was determined as being 93.49 per day.

However, only 4.6 classes per day were taught by those holding a major in industrial arts, while 5.3 classes per day was the average for those holding a minor. Since 5.3 classes per day were taught by those teachers having a minor, and 3.1 classes per day was the average taught by those teachers having neither a major nor a minor, it appears that those schools employing persons with less than a major in industrial arts find professional preparation insignificant.

TABLE II

AVERAGE NUMBER OF INDUSTRIAL ARTS CLASSES TAUGHT AND AVERAGE NUMBER OF STUDENTS IN INDUSTRIAL ARTS CLASSES

RESPONSES	MAJOR	MINOR	NEITHER	TOTAL
Number of classes taught in industrial arts per day	4.6	5.3	3.1	4.31
Number of students taught in industrial arts per day	102.96	105.28	61.16	93.49

Titles and Frequency of Classes Taught

It may be seen in Table III, that classes taught by the participants during the school day are set up in the table in order of teaching frequency. The classes most often taught were Woods, Metals, Mechanical Drawing, Power Mechanics, Crafts, Electricity, Architectural Drawing, Technical Drawing, and Electronics. As is indicated by the table, the most frequently listed courses are in those areas which have consistently been the most utilized components of the industrial arts field, with the exception of Power Mechanics.

The remaining classes listed in Table III were not mentioned often in the responses. These classes in order of frequency were Graphics, Plastics, Engineering Drawing, Leather, Carpentry, Photography, Welding, Home Mechanics, Design, Aircraft Assembly, Careers, Ceramics, Foundary, Sketching, and Technical Illustration.

It was the intent of the writer to determine actual numbers of classes taught by respondents in each area to ascertain what areas are being taught most frequently. Question number 3 of the survey was carefully stated to obtain this information (Appendix B). Of the respondents, however, approximately 40 per cent answered only as to titles of classes taught and did not give number of classes taught in each area. The responses of the survey were then stated in order of times that titles were listed.

TABLE III

TITLES AND FREQUENCY OF CLASSES TAUGHT IN INDUSTRIAL ARTS BY 223 RESPONDENTS

CLASS TITLES	NUMBER OF TEACHERS TEACHING LISTED CLASSES	PER CENT OF TEACHERS TEACHING LISTED CLASSES
Wood	88	39.46
Metals	57	25.56
Mechanical Drawing	56	25.11
General Shop	40	17.92
Drafting	28	12.56
Power Mechanics	26	11.66
Crafts	25	11.21
Electricity	23	10.30
Architectural Drawing	22	9.87
Technical Drawing	22	9.87
Electronics	18	8.07
Graphics	11	4.93
Plastics	9	4.04
Engineering Drawing	8	3.59
Leather	7	3.01
Carpentry	4	1.79
Photography	4	1.79
Welding	4	1.79
Home Mechanics	3	1.35
Design	2	.90
Aircraft Assembly	1	.45
Careers	1	.45
Ceramics	1	.45
Foundary	1	.45
Sketching	1	.45
Technical Drawing	1	.45

Number of Respondents Holding a Master's Degree

As shown in Table IV, 47 teachers, or 21 per cent were found to hold a master's degree. Thirty-six, or 16.14 per cent listed master's degrees in industrial arts.

TABLE IV

NUMBER OF INDUSTRIAL ARTS TEACHERS HOLDING A MASTER'S DEGREE

RESPONSES		PER CENT OF TEACHERS HOLDING A MASTER'S DEGREE
Number of industrial arts teachers holding a master's degree	47	21
No. of teachers holding a master's degree in industrial arts.	36	16.14

Number of Graduate and Undergraduate College Credits

Table V deals with the number of graduate and undergraduate credits received in the major area of industrial arts. It was determined that in the area of metals, the average number of quarter credits was 10.06. The average number of quarter credits in woods was found to be 12.06. Drafting was shown to be 7.28 quarter credits. The average number of quarter credits in graphics was 2.8 with 5.3 credits in the crafts area.

Question 7 of the survey (Appendix B) allowed the respondents to include credits earned in related areas that may not have been listed on the survey. A total of 120 respondents, or 53.81 per cent listed additional credits earned in the industrial arts field. The average number of credits earned in related areas was found to be 14.17 credits. The classes most often mentioned were Power Mechanics, Methods, and Curriculum. The remaining classes listed were Carpentry, Tool Repair, Leather, Plastics, Architectural Drawing, Philosophy, Welding, and Construction. The average number of quarter credits of industrial arts training per teacher teaching industrial arts was found to be 49.21 quarter credits.

TABLE V

NUMBER OF GRADUATE AND UNDERGRADUATE CREDITS RECEIVED BY COLLEGE TRAINING IN INDUSTRIAL ARTS

COURSE	AVERAGE NUMBER OF QUARTER CREDITS EARNED BY I.A. TEACHERS
Metals	10.06
Wood	12.06
Drafting	7.28
Electronics & Electricity	4.09
Graphics	2.80
Crafts	5.30
Additional credits	7.62
Totals	49.21

Teachers Teaching Vocationally Reimbursed Classes

As revealed in Table VI, there were 38 teachers, or 17 per cent involved in teaching reimbursable vocational classes. Eighty-three per cent were not teaching reimbursable vocational classes.

TABLE VI

TEACHERS TEACHING VOCATIONALLY REIMBURSABLE CLASSES

RESPONSES	TEACHERS	PERCENTAGE
Teachers teaching vocationally reimbursable classes	38	17
Not teaching vocationally reimbursable classes	185	83
Totals	223	100

Teachers Presently Holding a Vocational Certificate

The information contained in Table VII, presents the industrial arts teachers who had a vocational teaching certificate for the state of Washington for the year 1968-69. The number of teachers holding vocational certificates was found to be 40, or 18 per cent. Five respondents stated that they were teaching vocational classes without a vocational certificate. The State Department of Vocational Education was contacted to verify this finding (Appendix A).

It was found that 4 of the 5 respondents were not teaching vocational classes according to the State Director of Vocational Education. One respondent was teaching vocational classes and did hold a vocational certificate. This suggests that there are industrial arts teachers who do not understand what a vocational certificate consists of. There were 183 teachers, or 82 per cent who did not hold a vocational certificate.

TABLE VII

INDUSTRIAL ARTS TEACHERS PRESENTLY HOLDING A VOCATIONAL CERTIFICATE FOR THE STATE OF WASHINGTON

RESPONSES	TEACHERS	PERCENTAGE
Teachers presently holding a vocational teaching certificate	40	18
Not holding a vocational certificate	183	82

Opinions on Obtaining a Vocational Certificate

As indicated in an analysis of Table VIII, 113 teachers, or 50 per cent of the participants in this study were interested in obtaining a vocational certificate, while 75 teachers, or 34 per cent were not interested in obtaining a vocational certificate. Thirty-five teachers, or 16 per cent of the group responding were undecided.

The second hypothesis, as presented in this study, stated:

> Less than 10 per cent of the industrial arts teachers in the state of Washington have a vocational certificate or would desire to obtain one.

The results of the data indicate that while 82 per cent of the respondents did not hold a vocational certificate, 50 per cent desired to obtain one. Therefore, the hypothesis is disproved according to results of the study.

TABLE VIII

OPINIONS OF RESPONDENTS ON OBTAINING A VOCATIONAL CERTIFICATE

RESPONSES	NO OF TEACHERS	PERCENTAGE
Would consider becoming vocationally certified	113	50
Undecided	35	16
Would not consider becoming vocationally certified	75	34
Totals	223	100

Number of Teachers With Trade Experience

As noted in Table IX, 156 teachers, or 70 per cent had trade experience. However, 56 teachers, or 35.89 per cent of those with trade experience listed "no" or "undecided" in response to interest in obtaining a vocational certificate. In addition, 67 teachers, or 30 per cent did not have any trade experience. Of those without trade experience, 24 teachers, or 35.82 per cent stated an interest in obtaining a vocational certificate.

TABLE IX

NUMBER OF TEACHERS WITH TRADE EXPERIENCE

RESPONSES	TEACHERS	PERCENTAGE
Teachers who have trade experience	156	70
Do not have trade experience	67	30
Totals	223	100

Trade and Area of Experience of Teachers

Forty-six areas of trade experience were listed in Table X. Of these areas, 4 were the most frequently indicated. Carpentry was found to be the leading area of experience receiving 41.7 per cent, or 65 responses. Cabinet Construction followed. These 4 areas comprised 65.4 per cent of the listed trade experiences.

TABLE X

TRADE EXPERIENCE AND AREA OF EXPERIENCE OF 156 INDUSTRIAL ARTS TEACHERS

TRADE	NO OF TEACHERS WITH TRADE EXPERIENCE	TRADE	NO OF TEACHERS WITH TRADE EXPERIENCE
Carpentry	65	Television Repair	2
Cabinet Construction	17	Boat Building	1
Auto Mechanics	10	Cement Finisher	1
Construction	10	Civil Engineer	1
Drafting	8	Communications	1
Metals	8	Coppersmith	1
Electricity	7	Doll Factory	1
Electronics	7	Forestry	1
Machinist	6	Foundary	1
Ship Fitter	6	Glass	1
Aviation	5	Hardware	1
Mechanic	5	Hotel Management	1
Pattern & Tool Maker	5	Interior Decorator	1
Sheet Metal	5	Meat Cutter	1
Painter	4	Military Science	1
Farming	3	Photography	1
Lumbering	3	Picture Framing	1
Welding	3	Plastics	1
Boiler Maker	2	Plumbing	1
Engineer	2	School Maintenance	1
Plywood Mill	2	Seaman	1
Printing	2	Trailer & Camper Ind.	1
Saw Mill	2	Wireman	1

Teachers Working Evenings or Weekends--Not in Teaching

Thirty-nine per cent of the respondents worked either weekends or evenings in areas other than teaching.

TABLE XI

NUMBER OF INDUSTRIAL ARTS TEACHERS WORKING EVENINGS OR WEEKENDS--NOT IN TEACHING

RESPONSES	TEACHERS	PERCENTAGE
Work evenings or weekends	88	39
Do not work evenings or weekends	135	61
Totals	223	100

Number of Teachers Teaching Evening Classes

It was found in the investigation that 71 teachers, or 32 per cent were teaching evening classes. One hundred fifty-two teachers, or 68 per cent were not teaching evenings.

TABLE XII

NUMBER OF INDUSTRIAL ARTS TEACHERS TEACHING EVENING CLASSES

RESPONSES	TEACHERS	PERCENTAGE
Teach evening classes	71	32
Do not teach evening classes	152	68
Totals	223	100

Titles of Evening Classes Being Taught

Information on the areas taught by industrial arts teachers in the evening is presented in Table XIII. Driver Education was the most frequently stated evening class with 25 participants. The next most often mentioned classes were Graphics and Woodshop with 7 teaching each of these areas. A total of 26 different classes were listed as taught during the evening hours.

TABLE XIII

EVENING CLASSES BEIGN TAUGHT BY INDUSTRIAL ARTS TEACHERS

COURSE TITLES	NO OF EVENING CLASSES TAUGHT
Driver Education	25
Graphics	7
Wood Shop	7
Welding	6
Crafts	4
Auto Mechanics	3
Electronics	3
Furniture Construction	3
General Shop	2
Aircraft Assembly	2
Power Mechanics	2
Electricity	2
Machine Shop	2
Self Defense	1
Home Classes	1
Swimming	1
Trade Math	1
Cabinet Construction	1
Photography	1
Home Management	1
Design	1
Jewelry	1
D.H.I.A.	1
Community Leadership	1
Wild Life and Game Management	1
Extension--professional courses for W.W.S.C. and C.W.S.C.	1
Total	80

Respondent's Comments

Sixty-five of the 223 respondents wrote comments in the spaces provided on the survey form. The comments used here were of interest to this study and are abstracts--not the full comments.

The remarks here are representative samples. The number in the parentheses following each comment is the number of the respondent's survey form.

Comments About the Study

Let's have more surveys. (77)

You should not be so concerned with educational qualifications, but results of student learning. (4)

I just do not have time to look up all the credits I have in industrial arts. (133)

College education has little to do with how good a teacher I am. (124)

I would be very interested in the results of your study. (127)

I do not teach or work after school or weekends. Life is too short to work night and day. (113)

I am a math teacher teaching Mechanical Drawing voluntarily. (49)

I am a Drama teacher and teach the Advanced Wood class to get it in the curriculum for building stage sets. It has become half custodial. (72)

Comments About Vocational Interests

Industrial arts teachers should be paid according to trade experience. (90)

I have six years of college plus aviation flight and mechanical training for which no credit is given. (91)

I would gladly take a vocational certificate, but doubt if I would qualify in my chosen field of electronics. (76)

I think we must go to a vocational certificate to keep up with demands of students. (51)

I believe all industrial arts teachers at the high school level should have industrial experience. (16)

I think there is a real need for industrial arts instruction other than vocational education. (118)

As a vocationally certified teacher, you have more of a chance to become an expert in one area. (121)

I don't feel taxpayers get their money's worth from vocational programs. The student does not gain all that much either. (123)

The problem with vocational certificates is the union. (152)

I think all industrial arts teachers should have some trade experience. (153)

It is very hard for a teacher who is teaching to get three years of job experience in one trade. (166)

I will be interested in a vocational certificate next year after I am finished with coaching. (108)

There is a great need for industrial arts and vocational education to work together. (181)

A vocational certificate would be of no benefit to me. (217)

Colleges need to get in gear to try to catch up with industry. (188)

Colleges should teach more classes in auto, engines, and carpentry; and fewer in theory and education--especially the summer sessions. (173)

Teachers are too often forced to take classes they do not want to teach. (207)

We in industrial arts are being forced into vocational certification. (219)

We should receive credit for work experience and be paid accordingly. (223)

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

I. SUMMARY

This study was an investigation of the educational background and experience of the industrial arts teachers in the state of Washington. The survey method was used to obtain this information.

Specialized training, as shown in Chapter I, was felt to be extremely important to those persons leaving colleges to become industrial arts teachers. The information gathered during the survey as to qualifications of industrial arts teachers in the state of Washington may assist administrators in selection of personnel.

In Chapter II, the author has shown the requirements for the major/minor degrees from the colleges and universities of the state of Washington. It was found that there were no specific state-wide requirements for the training of industrial arts teachers. Many variations and allowances were permitted. There is little or no supervision of new teachers.

The teacher is only guaranteed a teaching position within his area of specialization for a period of one year. Although teacher proficiency can only be determined by what and how much the student learns, it seems obvious that an effective teacher must have a background in the area in which

he is teaching.

Before credit for trade experience is given, more should be known about its positive or negative aspects. If credit were given, at this time, for trade experience, the author feels it should be done only as additional listed credit and not toward a degree.

Chapter III presents the methods and procedures used for the gathering of data for the study. The survey questionnaire was determined to be the most effective device for this paper's purpose. Chapter IV is the presentation of the data. The data of the study is in table form and shown in simple per cent and by representative numbers.

II. CONCLUSIONS

In accordance with the purpose for this investigation, and on the basis of this study, the following conclusions were drawn. It was found that 93.49 students was the average number of students taught per day by the respondents. This is a substantial number of students being taught in the field of industrial arts.

It was concluded that the class most often taught was Wood. It is significant to point out that this area has been an integral component of previously structured industrial arts programs. However, according to the state colleges and universities' curriculas, as listed in Chapter II, the

wood area is not designated as being the major area for professional preparation.

It was shown that 79 per cent of the teachers teaching industrial arts held a major in industrial arts. This is a higher percentage than had been anticipated and is considered to be a positive finding.

Eight per cent of the respondents had minors in industrial arts. This is not an adequate background for effective teaching in industrial arts. The author feels it is not adequate training and could be disastrous for both the student and the teacher.

There were found to be 13 per cent of the teachers teaching industrial arts without either a major or minor in industrial arts. This is, in the opinion of the author, the most critical issue of the study. It is improper and unnecessary and should be corrected. This data disproves the first hypothesis stated in Cahpter I:

> Less than 10 per cent of the teachers teaching in the area of industrial arts are doing so without at least a minor in this field.

If the information from the respondents is assumed to be accurate, 8 per cent were teaching with only a minor and 13 per cent were teaching industrial arts without any background in this area. This makes a total of 21 per cent teaching in the industrial arts area who are not qualified. An ill-prepared teacher can do students a great deal of harm.

It was indicated that 21 per cent of the industrial arts teachers held advanced degrees with 16.14 per cent listing advanced degrees in industrial arts.

Few industrial arts teachers were found to be teaching reimbursable vocational classes. Eighty-two per cent did not hold a vocational certificate. Seventy per cent had trade experience. Fifty per cent were interested in obtaining a vocational certificate. Sixteen per cent were undecided. Thirty-four per cent were not interested in obtaining a vocational certificate. These findings disproved the second hypothesis as stated in Chapter I:

> Less than 10 per cent of the industrial arts teachers in the state of Washington have a vocational certificate or would desire to obtain one.

It was concluded that the most often listed trade area was carpentry. Sixty-five, or 41.7 per cent of the respondents listed this trade. The second area, cabinet construction, listed only 17 responses. This causes the author to wonder what experiences in carpentry the respondents have had.

III. RECOMMENDATIONS

The following recommendations are offered for the reader's consideration and are based on the findings and conclusions of this study. In view of the fact that personnel trained for specific responsibilities must be well prepared and adequately directed, the following recommendations

are offered.

Certification Requirements

Colleges and universities should issue a certificate to a teacher who has been prepared to teach in a designated field or grade level.

Assignment of Teachers

The State Department of Education should give top priority to assignment of teachers only in the area of responsibility for which they have been specifically trained. The State Department should enforce this.

Secondary Teachers

Teacher Education Colleges and Universities should give only a single area diploma for secondary teachers.

Inservice

More inservice programs of short duration should be offered at the local school district level. The courses related to a teacher's area could be taught by a "lead teacher" or by college extension. Credit of some sort ought to be offered. These inservice training programs should be offered at no cost to the teacher.

Administrators

The fact that even 13 per cent of the respondents indicated little professional preparation (neither a major

nor a minor) in the field of industrial arts, reflects upon the administration's selection of personnel. There may be many variables unaccounted for in regard to this factor. Financial implications as well as the size of the school district could conceivably necessitate the placing of unqualified personnel in the position of teaching industrial arts. However, these factors do not justify this administrative action.

One might question the importance of industrial arts as viewed by some administrators. Obviously, these persons do not consider the purposes of the education system, i.e., that students are entitled to the best possible education. It is recommended that those of us in the field of industrial arts strive to improve the concept of industrial education and thereby upgrade the professional competencies of those teaching and administrating in the public schools.

Difference in Programs

There appears to be a lack of communication between colleges in program development. Possibly, more effective means of communication between colleges, universities, and their departments could be developed.

Wood Area

Although wood was indicated as being the leading area of instruction, as found by the results of this investigation, the author recommends that an evaluation of this

program be made. The wood area has been criticized by many as being a "dead horse" in the industrial arts field. It should be evaluated to see whether or not it is being taught in an innovative and effective way. Regardless of its importance, as indicated by the respondents to the survey, a series of sterile required projects cannot be its ultimate goal. Industrial arts is for the development of people, not projects or things. The relevancy of instruction in woods can be justified as providing a basic background of skill development. As an integral part of the school program, industrial arts must strive to find its role and develop realistically and meaningfully in all areas.

IV. PROBLEMS FOR FURTHER STUDY

During the course of this study, several problems were encountered which might warrant further research. They are as follows:

1. A re-test of this study or a similar study is advised.
2. An investigation into the advisability of giving college credit for trade experience in relation to teaching success is suggested.
3. An investigation is suggested to determine the content of present industrial arts courses as being taught in the public schools. An evaluation of the program must be based on what the instructor is teaching, what the student is learning, and the demands of society as indicated by current trends and research.
4. A study should be made of the loss of industrial arts teachers to industry, administration, and other areas

to determine if this is a significant problem.

5. A shop-equipment study should be undertaken to include types of equipment being used, maintenance, and effective use of facilities and materials.

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APPENDIX A

January 20, 1969

Gentlemen:

I am working on my master's degree at Central Washington State College, and I need your help. I have made the enclosed form as short as possible for easier completion. By folding the form and stapling it, it can be easily returned. I sincerely hope that you will take the few seconds necessary to fill out, fold and drop this form in the mail.

I am trying to determine the educational qualifications of industrial arts teachers in our state, whether they have trade experience, and if they are interested in becoming vocationally certified. If you would like to know the results, watch for them in our State Association Newsletter.

This will not identify you in any way; therefore, be frank in your statements.

Thanks a lot,

Donald L. Peterson

enc.

Feb. 5, 1969

Gentlemen:

On January 20, 1969, I sent out a questionnaire to the industrial arts teachers in the state of Washington. In checking the returns, I find that yours has not been received.

At this time, I would like to re-emphasize the importance of your opinion and cooperation in making this a meaningful study.

May I, again, solicit your cooperation and ask that you forward your questionnaire as soon as possible.

Thank you,

Donald L. Peterson

March 9, 1969

Mr. Stephen Bishop
Supervisor of Trade & Industrial Ed.
State Dept. of Vocationae Education
Olympia, Washington

Dear Mr. Bishop:

I am doing my thesis at Central Washington State College on the training and background of industrial arts teachers in the state of Washington. On the survey questionnaire that I sent out, some respondents stated that they were teaching vocationally reimbursed classes without a vocational certificate in the state of Washington.

I did not believe that this was possible, So I am contacting you to make sure that I am not putting incorrect information in my study. Would you please check to see if the following persons actually do not have a vocational certificate? This information will be kept confidential and no names will be used in presenting the material in my study.

The persons I would like you to check are:

1.-----
2.-----
3.-----
4.-----
5.-----

Thank you for your assistance in my thesis study.

Sincerely,

Donald L. Peterson

BERT L. BROWN
DIRECTOR
AGRICULTURAL EDUCATION

FRANK H. WIMER
DIRECTOR
ADE AND TECHNICAL EDUCATION

MARIANNE ANDREWS
DIRECTOR
HE AND FAMILY LIFE EDUCATION

K. OTTO LOGAN
DIRECTOR
DISTRIBUTIVE EDUCATION

DENNIS E. ROLEY
DIRECTOR
SINESS AND OFFICE EDUCATION

STATE OF WASHINGTON

Coordinating Council for Occupational Education

State Division of Vocational Education

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ERNEST G. KRAMER
STATE DIRECTOR AND
EXECUTIVE OFFICER

RICHARD G. MOE
ADMINISTRATIVE ASSISTANT

EDWARD G. GONYAW
FISCAL OFFICER

66

March 12, 1969

Mr. Donald L. Peterson
702 Hobert Avenue
Ellensburg, Washington 98926

Dear Mr. Peterson:

I wish to acknowledge your letter of March 9, 1969 regarding Vocational teachers.

The only man we have a vocational teaching record for is Mr. [redacted] The others are not in our files.

If I can be of any further service to you please do not hesitate to write.

Sincerely,

Steven D. Bishopp, Supervisor
Teacher Education
Trade, Industrial & Technical Education

SDB:md

Please note:
This signature has been redacted due to security reasons.

APPENDIX B

Name _____
For return purposes only

INDUSTRIAL ARTS INFORMATION FORM

Explanation: Mark only those areas pertinent to your situation. Include only those classes taught during the school contracted day.
(Please mail immediately upon completion)

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1. Number of class periods in Industrial Arts you teach per day. _____
2. Total number of students per day in your Industrial Arts classes. _____
3. Titles of classes you teach in Industrial Arts (Metal, Basic Woods, Etc.)

a. _____ e. _____

b. _____ F. _____

c. _____ g. _____

d. _____ h. _____

4. What was your undergraduate major? _____
5. What was your undergraduate minor? _____
6. Do you have an advanced degree in Industrial Education? If so what degree?

_____

7. List below the approximate numbers of both graduate and undergraduate college quarter credits you have had for each of the following areas:

Title	Qt. Credits	Title	Qt. Credits
a. Metals		e. Graphics	
b. Wood		f. Crafts	
c. Drafting		g. Others	
d. Electronics or Electricity		h. Others	

8. Do you teach any vocationally reimbursed classes? (Yes or No) _____
9. Do you hold a vocational teaching certificate for the state of Washington ? ___
10. Do you have trade experience? _____
11. How many years of trade experience (List full year equivalent) _____
12. What trade? _____
13. Would you consider moving into a vocational position by becoming vocationally certified? _____
14. Do you work evenings or weekends not in teaching? _____
15. Do you teach evening classes? _____
    What classes?
    a. _____ b. _____ c. _____

Comments: _____

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