

AN ABSTRACT OF THE THESIS OF

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several years ago the author became interested in graduate work in industrial-arts teaching. No one person consulted could give complete information needed in the consideration of this profession, and out of this experience was born a desire to conduct the present study.

The purpose of the study is to assemble and interpret significant data available for the guidance of high school graduates interested in the field of "Industrial Arts Teaching as a Vocation".

Although there is a great deal of occupational information available on teaching as a general subject, there is a lack of material on industrial-arts as a specific part of the teaching field. Because of this lack of data the basic information of the study had to be obtained from college catalogues, unpublished theses, general reference books, and direct correspondence.

A careful selection of topics coming under the study was first submitted to critical analysis as to the possible importance of each topic, and these were then arranged in a "rating check list". This list was sent to a number of educators, both in the field of industrial-arts education and in general education.

From the analysis and the results of the check list the final parts of the study were chosen, and limited to cover the three pacific-coast states as follows:

(1) The duties and responsibilitys of an industrial-arts teacher, (2) the location of the several institutions providing teacher education programs in this field, (3) the rating of these programs from the standpoint of whether the graduate can or cannot obtain certification in other states, (4) certification requirements and suggested programs of study for industrial-arts credentials, (5) the comparative cost for tuition, fees, living, and supplies at the various schools, and (6) the opportunities upon graduation and the opportunities for self help, scholarships, etcetera.

It was thought by the author that the high school graduate could, with the help of his counselor, take the various topics under the study and compare them with his aptitudes and interests. The results of the analysis, of his aptitudes and interests, should be a guide for the choice of the occupation. The students financial standing may be a factor in the choice of the college he will attend.

After the high school graduate has narrowed his selection to one or two institutions he should plan a personal visit to the schools before making his final choice.

INDUSTRIAL ARTS TEACHING

AS A VOCATION

by

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INDUSTRIAL ARTS TEACHING AS A VOCATION

CHAPTER I

Introduction

There is probably no other occupation about which so much literature is available as there is about the occupation of teaching. This wealth of available material includes books on teaching as an occupation, occupational studies, textbooks on occupations, magazine articles, bulletins, pamphlets, survey studies, inspirational materials, and fiction; yet none of this material covers the teaching of industrial-arts as a specific part of the occupation of teaching.

At the beginning of this study (1939) the U.S. Office of Education had no available information on the colleges, universities and other schools offering industrial-arts teacher education. The author has found it necessary therefore to gather the basic material for this study from college and university catalogues, unpublished theses, and other references. Direct correspondence was used when the information desired could not be furnished by the above sources. This was deemed to be a better plan of procedure than the use of questionnaires because the material obtained would be more inclusive and, in all probability, more accurate than could have been obtained by questionnaires.

STATEMENT OF THE PROBLEM

Approximately two years ago, (1938) the author became interested in graduate work in industrial-arts teaching. No one person consulted could give complete information needed by the author in his consideration of industrial-arts teaching as a profession. After some time much information was obtained by word of mouth and by correspondence with various persons in charge of teacher education.

Out of that experience was born a desire to conduct the present study, titled "Industrial-Arts Teaching as a Vocation".

PURPOSE OF THE STUDY

Occupational studies were first published as early as 1910, by the Boston Vocation Bureau. They (5:20) were written by Frederick J. Allen, a pioneer research worker in the study of occupational opportunities. Since that time, many occupational studies have been written of which teaching as a general subject has had its share of books (4:3); yet, as stated before, no specific study has been made on industrial-arts teaching as far as the writer was able to discover.

Because industrial-arts is a specialized subject comparatively few institutions of higher learning offer a teacher education program in this field. Throughout the

United States there are approximately one-hundred-sixty (160) colleges and universities providing industrial-arts teacher education programs. Some schools (1:49-267) are rated high and some have lower ratings, based on the nature of the program and the number of states in which the graduates can secure teaching credentials on the basis of the usual curriculum offerings.

It would be desirable for high school counselors and industrial-arts teachers to have as complete a knowledge as possible of the opportunities in industrial-arts and of teacher education facilities, so that any student desiring information could receive it while in high school. The purpose of this study is to assemble and interpret all significant data available for the guidance of high school graduates interested in the field of industrial-arts teaching as a vocation.

PROCEDURE IN MAKING THE STUDY

A careful selection of topics coming under the study was first submitted to critical analysis as to the possible importance of each topic, and these were then arranged in a "rating check list". This check list was sent out to a number of educators, both in the field of industrial-arts education and general education. Selected raters included only those who had shown advancement in their field of education.

Each rater was asked to indicate whether or not, in his opinion, each "check point" was valid and how important he believed it to be to the study.* The raters chosen held one of the following positions:

1. Head of industrial-arts department in a state college.
2. Head of a department of education in a state college.
3. Head of industrial-arts department in a teachers college.
4. College instructor and professor of industrial-arts.
5. High school instructor.
6. Junior high school instructor.
7. Graduate student in industrial-arts.
8. Supervisor of industrial-arts in a large city.

*See appendix for "check list" and results.

CHAPTER II

Historical Background

A Brief History of Industrial-Arts

The term "industrial-arts" is relatively new in our school curriculum; yet it has a firm hold in the history of education. It was first organized in America as "manual training", a subject brought into the schools for the imparting of tool techniques to engineering and science students.

One of the first men to recognize the value of "manual training", as it was first called, was Woodward of Washington University, (2:318) St. Louis. He found that many of his students in applied mechanics had no knowledge of tools or of their uses. He set out to teach them the uses of tools, but it was not long until he found that these so-called shop courses might have an important place in general education.

A contemporary of Woodward, President Runkle of Massachusetts Institute of Technology, experienced the same fault in connection with the graduates of that school. Those who had practical experience with tools had no trouble in securing a job upon graduation; yet those with no practical experience often faced a delay in placement. Runkle could not see a remedy for this fault until after he visited the Russian Manual Training Exhibit at the Centennial, 1876.

On his return from the exposition he immediately set about organizing a course in shop-work for mechanical engineering students. This later developed into a School of Mechanic Arts, from which courses could be elected by other students whose intentions were to enter industry rather than to graduate from an engineering curriculum. Believing that shop-work had a definite place in general education, President Runkle said with regard to it: (2:321)

"At the same time, I believe that this could be made a part of general education, just as we make the sciences available for the same end through laboratory instruction."

"Sloyd", an importation from Sweden and another form of practical arts that speeded the adoption of shop-work in general education, was largely responsible for the influence of the finished product as a definite objective of the shop program.

With the trade and technical influence from the Russian system and with the finished useful product from the Scandinavian "Sloyd", manual training was being accepted more and more in the general education program. Leaders in the field of manual training began to widen their scope and to place less emphasis on the vocational and skill side of the subject. Instead of using only wood, teachers introduced other materials for student use such as metal and leather.

With this shift of emphasis from skill to the artistic side of the project came also a shift to the term "manual arts". Warner and others define manual arts in the following: (12:29)

"A term used to describe such subjects as wood-working, mechanical drawing, metal work, printing, leather work, jewelry making, clay work, book binding, etc...when taught as a form of general education having for its chief purpose that of developing within the pupil, through work in the school shops, manual skill and an appreciation of good design and construction by practice with a variety of exercises and practical projects of personal value."

Between 1900 and 1910 manual arts became recognized as a very valuable subject in the general education of the child. About 1910 and coincident with the development of guidance and the junior high school, more emphasis was placed on "exploration". The exploratory courses stressed knowledge and information concerning the different fields of industry. A new term, "industrial-arts", was used to supplant "manual arts". Warner and others give the following as a definition: (12:27)

"Industrial-Arts is one of the practical arts, a form of general or non-vocational education which provides learners with experiences, understandings, and appreciations of materials, tools, processes, products, and of the vocational conditions and requirements incident generally to the manufacturing and mechanical industries."

The industrial-arts shop gives the student a chance for real experience in a wide variety of activities.

It makes, in a large measure, allowance for the individual differences of pupils. The industrial-arts program should provide for as many activities as possible under the existing school conditions. A recent bulletin of the United States Department of Interior brings out this as: (10:9)

"The school shop, for example, can no longer justify its program, if youngsters make only traditional objects out of wood and then take them home as they did a generation ago. Functions of the modern program require a much more significant contribution; such programs now provide for:

1. Activities in as many industries as school shops and laboratories will permit.
2. The use of typical and important industrial tools.
3. Experience in production methods.
4. Experience in handicrafts.
5. Acquaintance with the organization and operation of industrial and commercial enterprises.
6. Study of safe and hygienic ways of doing all types of work.
7. Practice in indentifying the more important methods employed by industry.
8. Selection and use of the common products of industry.
9. Utilization of salvaged materials or products for project work.
10. Interpretation of the sources, principles, and applications of power, such as steam, water, internal combustion, and electricity.
11. Study of the origin and effects of significant inventions.

12. Study of materials from source to completed object.
13. Study of vocational opportunities, living conditions, remuneration of workers, controversial questions pertaining to capital, labor, and technology."

It is evident that from such a broad interpretation of industrial-arts, the pupils will be allowed to develop their individual interests and capacities, and at the same time will be working in as natural a situation as can be organized in any school.

INDUSTRIAL ARTS TEACHER EDUCATION

Industrial-arts teacher education in America is rather young compared to the other fields of education. The Industrial Education Association in 1884 was the first organization to stress the need for training teachers in this field, as stated in the objectives of the association: (2:466)

"...to obtain and disseminate information upon industrial education, and to stimulate public opinion in its favor....to provide instructors for schools and classes and, if necessary, to train teachers for this work."

Teacher training, however, was found to be too large a problem for the Association and was soon organized as a function of Columbia University. After this beginning many state normal schools organized similar programs.

In 1888 Gustaf Larsson opened his Sloyd Training School in Boston, giving instruction to public school

teachers. Soon a demand for the services of teachers trained in "Sloyd" required Larsson to set up more rigid certification requirements for the program.

During this same period many privately endowed institutions started teacher-education programs in both sloyd and manual training. Many of these private institutions later developed into some of the famous schools of today.

Although from 1890 to 1900 teacher-education institutions providing a program in manual training and sloyd could have been counted on the fingers of the two hands, today we have approximately one-hundred-sixty institutions of higher learning in the United States providing teacher education programs for industrial-arts.

CHAPTER III

The Study: "Industrial-Arts Teaching as a Vocation"

The "Check Points" on the rating list will be the six divisions taken up in this study. Analyzing various occupational studies these points were considered the six most important ones on which a student would need information if he was contemplating entering the field of industrial-arts teaching.

With the duties and responsibilities of an industrial-arts teacher analyzed, the student and counselor will have the information necessary to compare abilities and aptitudes of the student with the duties he will have to meet as an industrial-arts teacher.

He should know of the institutions of higher learning offering teacher education programs in industrial-arts within his geographical region and state. The size of the institution, especially in this field, is important because the larger colleges and universities have finances for larger staffs and better physical plants. These facilities may help the standing of the institution as observed by outside states.

Certification requirements for industrial arts credentials should be available for student information. There is a certification requirement which is basic within each state. Each local institution builds other require-

ments upon this basic minimum to fit the needs of its locality. If both state and local requirements are available to the student and the counselor they can compare the values of the program at the different institutions in terms of those requirements.

Also of importance in the choice of a college for future teacher education is the relative rating of the curriculum of the institution by other states as to the teaching credential requirements this curriculum will meet.

The cost of college education to the student cannot be overlooked because sometimes a college may be low in tuition cost and also offer only low placement possibilities upon graduation. Both should be considered before a choice is finally made. The cost may be an important item to the individual student from a financial standpoint, but opportunities upon graduation, opportunities for self help while attending school and available scholarships are also important.

The remaining pages will be devoted to the six significant points of the study, each of which was assigned a rating showing comparative importance by the persons assisting in the study.

DUTIES AND RESPONSIBILITIES OF AN INDUSTRIAL-ARTS TEACHER

Before a student chooses a specific life vocation he should compare the duties and responsibilities of that occupation with his aptitudes and interests.

A person intending to study for industrial-arts teaching should ask himself the following questions: (a) Have I mechanical ability? This is essential for a person who will be working with machinery and tools during most of his teaching time; (b) Can I work with and lead young people? (c) Is my health good? Since the industrial -arts teacher performs more strenuous activities than most regular classroom teachers, and since he must often work under noisy and irritating conditions, this point is important.

If answers to these questions are all positive, then one may consider the remaining duties and responsibilities of an industrial-arts teacher. These can be grouped under three general headings: Responsibilities to the school, the community, the home and family.

Duties and responsibilities to the school are further subdivided under three headings: Teaching responsibilities, extra-curricular activities, and professional duties.

Teaching responsibilities:

1. Under teaching responsibilities comes the preparation of courses of study to be used as teaching guides and the construction and collection of teaching materials to be used in the shop and recitation room.
2. The class must be organized in such a manner that the teaching is efficient from the standpoint of the teacher and the pupil.
3. All equipment within the shop must be in good running order to promote safety as well as quality work.
4. The industrial-arts teacher has more personal contact with students than most of the other teachers and may also be called upon to give advice and counsel to needy students.
5. The shop instructor is responsible for the safety of the students and must promote safety practice at all times in the shop.

Extra-curricular activities:

1. Outside of the class room the industrial-arts teacher may be called upon to sponsor some school activity. This may be in the form of shop clubs, hobby clubs, social clubs, or stagecraft construction.

2. He is expected to be in attendance at the various school activities such as athletic events, dramatic plays, and dances.
3. Before school, at noon-time, and after school activities are sometimes part of the responsibility of the industrial-arts teacher.

Professional duties:

1. All teachers should attend the faculty meetings of the school.
2. Professionally, the industrial-arts teacher should cooperate with and expect cooperation from other members of the faculty for the advancement of the school.
3. Self-improvement by summer study, extension work, and professional reading are important and must be considered by all who would succeed in teaching.
4. It is important that the teacher of industrial-arts be in touch with professional organizations. It is through such means that he learns of new ideas, methods, materials, and processes; also of improved methods of class-room teaching and of professional promotion.
5. Private research and experimentation are necessary to develop new processes, and teaching aids for instructional use in the shops.

6. Writing for publication should not be overlooked.

It is the class room teacher who nowadays is creating booklets, pamphlets, and materials on various phases of teaching, instead of one more remotely connected with the needs of the industrial-arts shop.

Community:

1. To direct the students properly the industrial-arts teacher should know the community, its philosophy, its needs, its historical and cultural background, and its educational facilities.
2. The teacher will need to make business, civic, and social contacts with various members of the community.
3. He may be asked to perform public service or welfare work such as being a scoutmaster, etcetera.
4. There will be times when he will have to promote industrial-arts as a public need.
5. Personal appearance is of great importance to the teacher and his standing in the community.
6. The community expects the teacher to be a good citizen.

After the industrial-arts teacher has completed his duties to the school and community, he still has his

home and his family as major responsibilities.

1. He should provide the necessities of life for his family, including health, comfort, and social necessity.
2. The industrial-arts teacher and his family should make social contacts within the community, for personal welfare as well as for the welfare of the community and the school.
3. He should keep himself in good health so as to fulfill all the duties and responsibilities required of him.
4. Recreation should be provided by the industrial-arts teacher for himself and his family, to keep physically and mentally fit.

All these statements should give the student interested in "Industrial-Arts Teaching as a Vocation" an idea of what will be expected of him, and whether he can meet these requirements and make a success of industrial-arts teaching. It can be seen that a good background is required before entering college so that one will need a strong foundation on which to build his college education in order to secure success in his future occupation.

INSTITUTIONS PROVIDING
INDUSTRIAL-ARTS EDUCATION IN THE THREE
PACIFIC COAST STATES

Within the three Pacific-coast states there are eight institutions of higher learning which provide programs of teacher education for industrial-arts.

California:

1. State College, Chico.
2. State College, San Jose.
3. State College, Santa Barbara.

Oregon:

1. Oregon State College, Corvallis.

Washington:

1. State College, Pullman.
2. Central Washington College of Education,
Ellensburg.
3. Eastern Washington College of Education,
Cheney.
4. Western Washington College of Education,
Bellingham.

Based upon a rating of size of student body, as shown by 1939-40 catalogues and enrollment figures, they may be listed in the following order:

1. State College Washington.
2. Oregon State College.
3. State College, San Jose.
4. State College, Santa Barbara.
5. State College, Chico.
6. Washington Colleges of Education.

RATING OF THE INDUSTRIAL ARTS TEACHER
EDUCATION PROGRAMS IN THE THREE PACIFIC COAST
STATES

Because of the depression and various other conditions within the United States, many people have migrated from state to state. Perhaps the main cause of this was the lack of employment at home and the resultant migration to other states to seek employment. The teaching field is not devoid of this movement as many teachers prepared in one state are now teaching in others. This is not all a result of lack of employment in the field, as some states do not provide for industrial-arts teacher education within the state but depend upon other states for teaching personnel.

This being the case schools of higher learning must endeavor to prepare young people in such a manner that they may earn a livelihood and take their places in society, not only in their own locality, but also in other states.

Each state has set up "standards" or teacher certification requirements which, if organized properly, will allow a teacher prepared in one state to migrate to another. It must be remembered, however, that each state bases its teaching credentials upon preparation and not upon credentials valid in other states.

The following statement will further substantiate this thought. (6:4)

"Certificates secured in other states are not transferable to this state; neither do the laws of this state provide for the issuance of certificates by endorsement. All certificates issued in Oregon are based on the preparation which an applicant has had and not on any certificates he may hold."

Hence, a teacher education program looking toward the future and toward the placement of its graduates must cooperate not state by state, but as a whole, throughout the United States.

California and Oregon are among the states that make a specialty of industrial-arts teacher education. Washington is listed as average; it is among the states whose institutions offer programs sufficient in scope to meet local demands and regularly prepare industrial-arts teachers for placement within its own state boundaries.

Ratings on the following pages, from Allen's, (1:60; 204; 248) study, show to what extent graduates of the industrial-arts teacher education programs in the three Pacific Coast states can or cannot meet certification requirements in other states.

FINDINGS FOR THE
STATE OF CALIFORNIA* (1:60)

ALABAMA: Unqualified for the Class "B" Secondary Professional Certificate for teaching industrial-arts in the secondary schools; lack sufficient hours in academic subjects.

ARIZONA: Qualified for the Special Certificate entitling the holder to teach industrial-arts in grades 1-12 inclusive.

ARKANSAS: Qualified (Provisionally) for the Industrial Arts Certificate valid for teaching industrial-arts in any senior or junior high school in the state providing substitution can be made for one specified education course.

COLORADO: Qualified for the Special Temporary Certificate valid for teaching only industrial-arts.

Qualified for the Graduate Temporary Certificate valid for teaching any subject (including the special subject of industrial-arts) in any school in Colorado.

CONNECTICUT: Qualified for the Special Certificate to teach industrial-arts in the public schools, 50% or more of time being devoted to that subject.

Qualified for the Limited Secondary Certificate for the teaching of industrial-arts, requiring less than half time.

DELAWARE: Qualified for the Special Branches Certificate valid for the teaching of manual or industrial education in all high schools in the state.

Qualified for the Special Subject Certificate valid for teaching in both the high and elementary grades the subject of "Fine and Industrial Arts".

*Includes holders of certificates valid for teaching industrial-arts in California and based on graduation from the industrial-arts curricula at the State Colleges at Chico, San Jose, and Santa Barbara, California.

FLORIDA: Qualified for the 2-year Graduate State Certificate valid for teaching the individual industrial-arts subject endorsed thereon.

Qualified for the 4-year Graduate State Certificate valid for teaching the individual industrial-arts subject endorsed thereon.

GEORGIA: No certification data received and Georgia gives no industrial-arts preparation as such.

IDAHO: Qualified (Provisionally) for the State High School certificate, a blanket affair, permitting the holder to teach any subject, including industrial-arts, in grades 7-12 inclusive, providing the 12 semester hour or 6-weeks summer graduate residence requirement plus courses in Idaho School Law and Idaho High School Course of study are satisfied.

Qualified (Provisionally) for the State Specialists' Certificate valid for teaching only industrial-arts, providing the above stated residence requirements are satisfied.

ILLINOIS: Qualified for the Limited State Special Certificate to teach industrial-arts.

INDIANA: Qualified (Provisionally) for the Special License valid in high and elementary schools for the teaching of industrial-arts providing substitution can be made for one education course.

Qualified (Provisionally) for the Regular Certificate or License valid for teaching industrial-arts in the high, junior high, and 7-8 grades providing substitution can be made for one education course.

IOWA: Qualified for the Special Subject Certificate valid for teaching the subject or subjects in the field of industrial-arts designated on the certificate, in the grades and high schools.

Qualified for the Standard Secondary Certificate valid for teaching the preparation major (industrial-arts) in the 7-8 grades and high school.

KANSAS: Qualified (Provisionally) for the Special Certificate to teach industrial-arts in any school in the State providing substitution possible for one specified

education course.

KENTUCKY: Qualified for permission to teach industrial-arts as a major or minor subject.

LOUISIANA: Qualified to teach industrial-arts in high schools of the State.

MAINE: Qualified for the Special Provisional Certificate the holders of which may teach the subject of industrial arts in both the high and elementary grade schools.

Qualified for the First Provisional Professional Certificate, the regular secondary credential.

MARYLAND: Qualified for the Special Certificate to teach industrial-arts.

MASSACHUSETTS: Unqualified for teaching industrial-arts in the high schools for lack of specified technical and education courses.

MICHIGAN: Qualified for the State Secondary Provisional Certificate to teach industrial-arts as a major subject.

MINNESOTA: Qualified (Provisionally) for the High School Standard Special Certificate to teach industrial-arts in junior-senior, four-year, six-year high schools providing substitution possible for one education course.

MISSISSIPPI: Certification requirements reported as being in process of change--data not available at this time.

MISSOURI: Unqualified for the First Class High School Industrial Arts Specific Subject-Matter Certificate valid for teaching in the first-class high schools; lack academic subject hours and certain specified education courses.

MONTANA: No preparation is given for the teaching of industrial-arts in Montana. A three-year trade experience requirement in effect there would bar many

teachers of industrial-arts from out-of-state.

NEBRASKA: Qualified for the Limited Secondary-School Certificate valid for teaching major preparation (industrial-arts) in grades 7-12 inclusive.

NEVADA: Qualified for the Regular High-School Certificate to teach in any high school in the State.

NEW HAMPSHIRE: Unqualified because requirements include graduation from industrial-arts curriculum in high school and from Trades and Industries curriculum in college.

NEW JERSEY: Unqualified because ten-week practical experience requirement bars many out-of-state prepared industrial teachers.

NEW MEXICO: Qualified (Provisionally) for the Special Certificate to teach industrial-arts in any grade providing requirements of 6 semester hours in residence and "Problems in Education in New Mexico" are satisfied.

NEW YORK: Qualified for the Provisional Certificate valid for teaching industrial-arts.

NORTH CAROLINA: Qualified for the High-School-Teachers Certificate to teach industrial-arts.

NORTH DAKOTA: Qualified for the First Grade Professional Certificate, enabling the holder to teach in any of the public schools of the State.

Qualified for the Special Certificate valid for teaching only the subject named on the certificate.

OHIO: Unqualified for the Industrial Arts Certificate requiring a 40-semester-hour major in that subject; lack certain specified education courses.

Unqualified for the Industrial Arts Certificate requiring a 16-semester-hour minor preparation; lack certain specified education courses.

OKLAHOMA: Unqualified for the One-Year Certificate, based on two years of training and valid for special subjects only, for lack of specified technical, academic, and education courses.

Unqualified for the Life Certificate based on four

years of training and valid for special subjects only in industrial-arts, for lack of specified technical, academic, and education courses.

OREGON: Unqualified for the Special Certificate to teach the industrial-arts subject or subjects named in such certificates; lack 15-term-hours-graduate work and courses in Oregon History and School Law.

Unqualified for the Standard Four-Year High-School Certificate valid for teaching any subject (including the special subject of industrial-arts) in the high schools and in junior high schools that include one or more grades above the 8th because lack 15 quarter or term hours graduate work and courses in Oregon History and School Law.

PENNSYLVANIA: Unqualified for the Provisional College Certificate valid for teaching only those industrial-arts subjects written thereon; lack adequate hour-subject concentration to meet requirement.

Unqualified for the Standard Temporary Certificate valid for teaching only those industrial-arts subjects written thereon; lack adequate hour-subject concentration to meet requirement.

RHODE ISLAND: Unqualified because of 400 clock hours (22½ semester hours) practice teaching residence requirement.

SOUTH CAROLINA: Qualified because able to meet requirements of the Southern Accrediting Association, the only standards for industrial-arts teacher certification used at present--committee now at work on more specific requirements.

SOUTH DAKOTA: Qualified for the High School Special Certificate valid for teaching industrial-arts in high schools.

TENNESSEE: Qualified for the Professional High School Certificate with industrial-arts endorsed thereon and valid for the teaching of that subject in the public schools of the state.

TEXAS: Qualified for the Special 3 Year Certificate to teach industrial-arts.

Qualified for the Special 4 year Certificate to teach industrial-arts.

UTAH: Unqualified for the Class "A" 3 Year Certificate; lack specified technical, academic, and education courses.

VERMONT: Qualified for the General High-School Teaching Certificate; at present Vermont has no industrial-arts teacher certification requirements beyond 12-semester-hours education and the sompletion of a four-year college course.

VIRGINIA: Qualified because only certification requirements is degree preparation which shall include 12-semester-hours of industrial-arts training.

WASHINGTON: Unqualified because of a lack of 45-term-hours of graduate work.

WEST VIRGINIA: Unqualified for the Special Non-academic Certificate valid for teaching and supervising industrial-arts subjects in the secondary and elementary grades; lack sufficient hours of academic and education courses and certain specified technical courses.

WISCONSIN: Unqualified for lack of sufficient academic courses hours and a certain specified education course.

WYOMING: Qualified.

SUMMARY: Qualified 30 states

Unqualified 14 states

CURRICULA SOURCES: Chico State College, Chico, California
San Jose State College, San Jose,
California
Santa Barbara State College, Santa
Barbara, California

FINDINGS FOR THE
STATE OF OREGON* (1:204)

ALABAMA: Qualified (Provisionally) for the Class "B" Secondary Professional Certificate for teaching industrial arts in the secondary schools providing the six semester hour history requirement is satisfied.

ARIZONA: Qualified (Provisionally) for the Special Certificate entitling the holder to teach industrial-arts in any grade in elementary and high schools, providing an additional semester hour is directed teaching is presented.

ARKANSAS: Unqualified for the Industrial Arts Certificate valid for teaching industrial-arts in any senior or junior high school in the State; lack certain technical courses and hours in an academic subject.

CALIFORNIA: Qualified (Provisionally) for the Special Secondary Credential in Industrial Arts Education, valid for teaching industrial-arts subjects as indicated thereon in the public schools of the State; providing certain specified technical courses are presented.

COLORADO: Qualified (Provisionally) for the Special Temporary Certificate valid for teaching only industrial-arts; providing requirement of vocational guidance is satisfied.

Qualified for the Graduate Temporary Certificate valid for teaching any subject (including industrial-arts) in any school in Colorado; providing the requirement of vocational guidance is satisfied.

CONNECTICUT: Qualified for the Special Certificate to teach industrial-arts in the public schools, 50% or more of time being devoted there to.

Qualified for the Limited Secondary Certificate for the teaching of industrial-arts and requiring less than
*Includes holders of certificates valid for teaching industrial-arts in Oregon and based on graduation from the industrial-arts curriculum at Oregon State College, Corvallis, Oregon.

half time.

DELAWARE: Qualified (Provisionally) for the Special Branches Certificate valid for teaching manual or industrial-arts in all high schools, providing that two additional semester hours of practice teaching are presented.

Qualified (Provisionally) for the Special Subject Certificate valid for teaching in both the high and elementary grades the subject of "Fine and Industrial Arts"; providing two additional semester hours of practice teaching are presented.

FLORIDA: Qualified for the 2 year Graduate State Certificate valid for the teaching of the individual industrial-arts subjects endorsed thereon.

Qualified for the 4 year Graduate State Certificate valid for the teaching of the individual industrial-arts subjects endorsed thereon.

GEORGIA: No certification data received and no industrial arts teacher preparation given as such.

IDAHO: Qualified (Provisionally) for the State High School Certificate, a blanket affair, permitting the holder to teach any subject including industrial-arts in in grades 7-12 providing the 12-semester-hour residence requirement plus courses in Idaho School Law and High-School Course of Study are satisfied.

Qualified (Provisionally) for the State Specialists' Certificate valid only for teaching industrial-arts providing the above set forth residence requirements are satisfied.

ILLINOIS: Qualified for the Limited State Special Certificate to teach industrial-arts.

INDIANA: Qualified for the Regular Certificate or License valid for teaching industrial-arts in the high, junior, and 7-8 grades.

Qualified for the Special License valid in High and Elementary Schools for the teaching of industrial-arts.

IOWA: Unqualified for the Standard Secondary Certificate

valid for teaching in the 7-8 grades and high school the major subject of preparation (industrial-arts); lack sufficient subject hour concentration to permit of two teaching minors.

Qualified for the Special Subject Certification valid for teaching the subject or subjects in the field of industrial-arts designated thereon in the grades and high school.

KANSAS: Unqualified for the Special Certificate to teach industrial-arts in any school in the state; lack required hours academic subjects.

KENTUCKY: Qualified for permission to teach industrial-arts as a major or minor subject.

LOUISIANA: Qualified to teach industrial-arts in the high schools.

MAINE: Qualified for the Special Provisional Certificate the holders of which may teach industrial-arts in both the high and elementary grades.

Qualified for the First Provisional Professional Certificate, the regular secondary credential.

MARYLAND: Qualified (Provisionally) for the Special Certificate to teach industrial-arts; providing two additional semester hours of practice teaching are presented.

MASSACHUSETTS: Unqualified for teaching industrial-arts in the high schools; lack adequate hours in certain academic subjects and two specified technical courses.

MICHIGAN: Qualified (Provisionally) for the State Secondary Provisional Certificate to teach industrial-arts as a major subject providing substitution can be made for one education course.

MINNESOTA: Qualified (Provisionally) for the High School Standard Special Certificate to teach industrial-arts in junior-senior, four-year, six-year high schools providing substitution possible for one specified education subject.

MISSISSIPPI: Certification requirements reported as being in process of change--no data available at this time.

MISSOURI: Unqualified for the First-Class High-School Industrial Arts Specific Subject-matter Certificate valid for teaching woodwork and drawing and 5 semester hour subjects in the first-class high schools for lack of certain academic subject hours and specified education subjects.

MONTANA: No preparation is given for the teaching of industrial-arts in Montana--a three-year trade experience requirement would bar many teachers of industrial-arts from out-of-state.

NEBRASKA: Qualified for the Limited Secondary School Certificate valid for teaching major preparation (industrial-arts) in grades 7-12 inclusive.

NEVADA: Qualified for the Regular High-School Certificate to teach in any high school in the state.

NEW HAMPSHIRE: Unqualified require graduation from industrial-arts curriculum in high school and from Trades and Industries curriculum in college.

NEW JERSEY: Unqualified ten-week practical experience requirement bars many out-of-state prepared industrial-arts teachers.

NEW MEXICO: Qualified (Provisionally) for the Special Certificate to teach industrial-arts in any grade providing the six semester hour residence and "Problems in Education in New Mexico" requirements are satisfied.

NEW YORK: Qualified for the Provisional Certificate valid for teaching industrial-arts.

NORTH CAROLINA: Qualified for the High School Teachers Certificate to teach industrial-arts.

NORTH DAKOTA: Qualified for the First Grade Professional Certificate enabling the holder to teach in any of the public schools in the state.

Qualified for the Special Certificate valid for teaching only the subject named on the certificate.

OHIO: Qualified for the Industrial Arts Certificate requiring a major of 40 semester hours in industrial-

Qualified for the Industrial Arts Certificate requiring a minor of 16 semester hours in industrial-arts.

OKLAHOMA: Qualified (Provisionally) for the One-Year Certificate based on two years of training and for special subjects only; providing two additional semester hours of practice teaching and certain specified education subjects are presented.

Qualified (Provisionally) for the Life Certificate based on four years of training and for special subjects only in industrial-arts; providing two additional semester hours of practice teaching and certain specified education subjects are presented.

PENNSYLVANIA: Unqualified for the Provisional College Certificate valid for teaching only those industrial-arts subjects written thereon; lack three semester hours practice teaching and concentration of subject hours.

Unqualified for the Standard Temporary Certificate valid for teaching only those industrial-arts subjects written thereon; lack three semester hours in practice teaching and the subject hour concentration mentioned above.

RHODE ISLAND: Unqualified because of 400 clock hour (22½ semester hours) practice teaching residence requirement.

SOUTH CAROLINA: Qualified to meet requirements of the Southern Accrediting Association, The standards for industrial-arts teacher certification used at present.

SOUTH DAKOTA: Qualified for the High School Special Certificate valid for teaching industrial-arts in high schools.

TENNESSEE: Qualified for the Professional High School Certificate with industrial-arts endorsed thereon and valid for teaching that subject in the public schools of the state.

TEXAS: Qualified for the Special 3 Year Certificate to teach industrial arts.

Qualified for the Special 4 Year Certificate to teach industrial-arts.

Qualified for the Special Permanent Certificate to teach industrial-arts.

UTAH: Unqualified for the Class "A" 3 Year Certificate; lack technical and industrial education specified subject requirements and also a number of academic hours.

VERMONT: Qualified for the General High School Teaching Certificate; at present Vermont has no industrial-arts teacher certification requirements beyond 12 semester hours education and a degree.

VIRGINIA: Qualified--have required degree preparation including 12 semester hours industrial-arts.

WASHINGTON: Qualified (Provisionally) -- providing 30 quarter hours additional graduate work is presented; graduate work is available with opportunity for graduate major in industrial education.

WEST VIRGINIA: Unqualified for the Special Non-academic Certificate valid for teaching and supervising industrial-arts subjects in the secondary and elementary grades; lack hours in certain academic subjects and industrial education.

WISCONSIN: Qualified (Provisionally) -- five additional quarter hours in social studies and a certain education course must be presented.

WYOMING: Qualified.

SUMMARY: Qualified 33 states. Unqualified 11 states.

CURRICULUM SOURCE: Oregon State College, Corvallis, Oregon.

FINDINGS FOR THE

STATE OF WASHINGTON* (1:246)

ALABAMA: Unqualified for the Class "B" Secondary Professional Certificate for teaching industrial-arts in the secondary schools; lack sufficient hours in education and academic fields.

ARIZONA: Unqualified for Special Certificate entitling the holder to teach industrial-arts in grades 1-12 inclusive; lack hours in certain specified education courses.

ARKANSAS: Unqualified for the Industrial Arts Certificate valid for teaching industrial-arts in any senior or junior high school in the State; lack several specified courses in education, technical and academic fields.

CALIFORNIA: Unqualified for the Special Secondary Certificate in Industrial Arts Education valid for teaching industrial-arts as indicated upon the credential in the public schools of the state; lack concentration of hours in specified subject group.

COLORADO: Unqualified for the Graduate Temporary Certificate that permits the teaching of any subject (including the special subject of industrial-arts) in any school in Colorado; lack certain specified education courses.

Unqualified for the Special Temporary Certificate valid for teaching only industrial-arts; lack sufficient technical and education hours.

CONNECTICUT: Unqualified for the Special Certificate to teach industrial-arts in the public schools, 50% or more time being devoted there to; lack sufficient hours in specified subjects.

Qualified for the Limited Secondary Certificate for teaching industrial-arts and requiring less than half time.

* Includes holders of certificates valid for teaching industrial-arts in Washington and based on graduation from the industrial-arts curriculum at Washington State College, Pullman, Washington.

DELAWARE: Unqualified for the Special Branches Certificate valid for teaching manual or industrial-arts education in all high schools; lack sufficient hours in practice teaching and technical field.

Unqualified for the Special Subject Certificate valid for teaching in both high and elementary grades the subject of "Fine and Industrial Arts" due to reasons above.

FLORIDA: Qualified (Provisionally) for the 2 Year Graduate State Certificate valid for teaching the individual industrial-arts subject endorsed thereon, providing sufficient concentration of hours is directed in certain subjects.

Qualified (Provisionally) for the 4 Year Graduate State Certificate valid for teaching the individual industrial-arts subject endorsed thereon, with the above proviso.

GEORGIA: No certification data received and no industrial-arts teaching preparation given as such.

IDAHO: Qualified (Provisionally) for the State High School Certificate, a blanket affair, permitting the holder to teach any subject including industrial-arts in grades 7-12 inclusive, providing the 12 semester hour graduate residence requirement plus courses in Idaho School Law and High School Course of Study are satisfied.

Qualified (Provisionally) for the State Specialists' Certificate valid for teaching only industrial-arts, with above provisions.

ILLINOIS: Qualified for the Limited Special Certificate to teach industrial-arts.

INDIANA: Unqualified for the Special License valid in high and elementary schools for teaching industrial-arts; lack sufficient hours in education and technical fields.

Unqualified for the Regular Certificate or License valid for teaching industrial-arts in the high, junior, and 7-8 grades; lack above specifications.

IOWA: Unqualified for the Special Subject Certificate valid for teaching the subject or subjects in the field of industrial-arts designated on certificate in the grades and high schools; lack sufficient technical preparation to meet requirement and a specified education course.

Unqualified for the Standard Secondary Certificate valid for teaching in the 7-8 grades and high school the preparation major (industrial-arts) for above reasons.

KANSAS: Unqualified for the Special Certificate to teach industrial-arts in any school in the State; lack sufficient hours in technical and academic subjects.

KENTUCKY: Qualified for permission to teach industrial-arts as a major or minor subject.

LOUISIANA: Qualified to teach industrial-arts in the high schools.

MAINE: Qualified for the Special Provisional Certificate, the holder of which may teach the subject of industrial-arts in both the high and elementary grades.

Qualified for the First Provisional Professional Certificate, the regular secondary credential.

MARYLAND: Unqualified for the Special Certificate to teach industrial-arts; lack sufficient hours in practice teaching and specified technical courses.

MASSACHUSETTS: Unqualified for teaching industrial-arts in the high schools for lack of sufficient hours in education, academic and technical fields and certain specified courses.

MICHIGAN: Unqualified for the State Secondary Provisional Certificate to teach industrial-arts as a major subject; lack sufficient hours in practice teaching and certain education courses.

MINNESOTA: Unqualified for the High School Standard Special Certificate to teach industrial-arts in junior-senior, four-year six-year high schools; lack sufficient hours to meet the technical requirement.

MISSISSIPPI: Certification requirements reported as being in process of change--no data available at this time.

- MISSOURI: Unqualified for the First-Class High School Industrial Arts Specific Subject-matter Certificate valid for teaching woodwork and drawing and 5 semester hour subjects in the first-class high schools for lack of specified education courses.
- MONTANA: No preparation is given for the teaching of industrial-arts in Montana--a three-year trade experience requirement would bar many out-of-state teachers of industrial-arts.
- NEBRASKA: Qualified for the Limited Secondary School Certificate valid for teaching major preparation (industrial-arts) in grades 7-12 inclusive.
- NEVADA: Qualified for the Regular High School Certificate to teach in any high school in the State.
- NEW HAMPSHIRE: Unqualified -- require graduation from industrial-arts curriculum in high school and from trades and industries curriculum in college.
- NEW JERSEY: Unqualified -- lack several specified courses and ten-week practical experience requirement bars many out-of-state prepared industrial-arts teachers.
- NEW MEXICO: Qualified (Provisionally) for the Special Certificate to teach industrial-arts in any grade providing the 6 semester hour residence and "Problems in Education in New Mexico" requirements are satisfied.
- NEW YORK: Qualified for the Provisional Certificate valid for teaching industrial-arts.
- NORTH CAROLINA: Qualified for the High School Teachers' certificate to teach industrial-arts.
- NORTH DAKOTA: Qualified for the First Grade Professional Certificate enabling the holder to teach in any public school in the state.
- OHIO: Unqualified for the Industrial Arts Certificate requiring a major in that subject; lack sufficient hours in education and technical courses.
- Unqualified for the Industrial Arts Certificate requiring a minor in that subject due to above deficiencies.

OKLAHOMA: Unqualified for the One Year Certificate based on two years of training and for special subjects only in industrial-arts; lack hours in practice teaching, education, technical and academic fields.

Unqualified for the Life Certificate based on four years of training and for special subjects only in industrial-arts for reasons stated above.

OREGON: Qualified (Provisionally) for the Special Certificate to teach in the industrial-arts subject or subjects named thereon, providing 15 quarter hours of acceptable graduate work plus courses in Oregon History and School Law are presented and substitution can be made for specified education course.

Qualified (Provisionally) for the Standard Four-Year High School Certificate valid for teaching any subject including industrial-arts in the high schools and junior high schools that include one or more grades above the 8th, with the above provisions.

PENNSYLVANIA: Unqualified for the Provisional College Certificate valid for teaching only those industrial-arts subjects written thereon; lack sufficient concentration in subject hours.

Unqualified for the Standard Temporary Certificate valid for teaching only those industrial-arts subjects written thereon; lack sufficient concentration in subject hours.

RHODE ISLAND: Unqualified because of the 400 clock hour (22½ semester hours) practice residence requirement.

SOUTH CAROLINA: Qualified to meet requirements of the Southern Accrediting Association, the standards for industrial-arts teacher certification used at present.

SOUTH DAKOTA: Qualified for the High School Special Certificate valid for teaching industrial-arts in high schools.

TENNESSEE: Qualified for the Professional High School Certificate with industrial-arts endorsed thereon and valid for teaching that subject in the public schools of the state.

TEXAS: Qualified (Provisionally) for the Special 3 Year Certificate to teach industrial-arts providing the requirement of American Government is satisfied.

Qualified (Provisionally) for the Special 4 Year Certificate to teach industrial-arts, with same proviso.

Qualified (Provisionally) for the Special Permanent Certificate to teach industrial-arts, with same proviso.

UTAH: Unqualified for the Class "A" 3 Year Certificate; lack technical and industrial education subjects.

VERMONT: Qualified for the General High School Teaching Certificate; at present Vermont has no industrial-arts teacher certification requirements beyond 12 semester hours in education and a degree.

VIRGINIA: Qualified -- have degree preparation that includes 12 semester hours of industrial-arts training.

WEST VIRGINIA: Unqualified for the Special Non-academic Certificate valid for teaching and supervising industrial-arts subjects in the secondary and elementary grades; lack sufficient hours to meet several subject specifications.

WISCONSIN: Unqualified for lack of certain education and academic courses and hours.

WYOMING: Qualified.

SUMMARY: Qualified, 20. Unqualified, 24.

CURRICULUM SOURCE: Washington State College, Pullman, Washington.

CERTIFICATION REQUIREMENTS IN THE
THREE
PACIFIC COAST STATES

California

In California a candidate for the Bachelor of Arts degree must complete at least one major and two minors.

A candidate for a Bachelor of Arts degree and a teaching credential may not apply more than 40 semester units of closely related subjects, six of which must be in upper division courses.

The State Board requirements for the Bachelor of Arts degree are: (3:33)

	Semester Hours
1. Social Sciences - - -	8-14
2. Natural Sciences - -	12-14
3. Pshchology - - - - -	3
4. English - - - - -	6
5. Physical Education - - -	2
6. Electives - - - - -	<u>25</u>
Total lower division	64
Upper division	60

*Total Minimum Credit
for graduation - - - - 124 semester hours

*To include one major and two minors.

Note: Eight of the fourteen units of social sciences and twelve of the fourteen units of natural sciences required must be taken in the lower division.

Other requirements (9:113)

"A minimum of 2 months (416 clock hours) of practical garage experience in addition to 124 semester units of college work is required for the long term credential to teach automobile mechanics."

"A minimum of not less than 12 semester units of College work plus not less than 416 clock hours of practical experience in a commercial shop are required for certification in printing."

SUGGESTED PROGRAMS

Chico State College

The following is a four-year curriculum in industrial-arts leading to the Bachelor of Arts degree and the Special Secondary Credential in Industrial Arts Education, as suggested by Chico State College, Chico, California. (3:88)

INDUSTRIAL ARTS*			
Freshman Year			
Course No.	Name	First semester units	Second semester units
Eng. 1A-B	Composition	3	3
Ed. 1	Orientation	2	
Hist. 1A-B	History of Western Civilization	3	3
Math C	Trigonometry	3	
Nat. Sci.	Natural Science		3
I. E. 8	Auto Mechanics		4
I.E. 56	Mechanical Drawing	2	
I.E.	Ind. Arts chosen from the following-I.E. 3,4,5,6, 17, 50, 51, 54, 57, 60, 62, 75-A-B	3	3
P.E	Physical Education	$\frac{1}{2}$	$\frac{1}{2}$
Elect.	Electives	1	
Totals		$16\frac{1}{2}$	$16\frac{1}{2}$
Sophomore Year			
Phys. 2A-B	Physics	4	4
Psy. 1	General Psychology	3	
Geol. 1	Geology	3	
Soc. Sci	Social Science	3	6
I.E.	Ind. Arts Elect. First semester electives from following: I.E. 18, 63, 71, 73	3	6
P.E.	Physical Education	$\frac{1}{2}$	$\frac{1}{2}$
Totals		$16\frac{1}{2}$	$16\frac{1}{2}$

*Two minors required

Chico State College (cont.) (3:89)

INDUSTRIAL ARTS			
Junior Year			
Course No.	Name	First semester units	Second semester units
Econ. 120	Mod. Indus. Organ.	2	
Econ.121	Public Utilities		2
I.E.	Ind. Arts Elect.	5	7
I.E. 102	Voc. and Educ. Guidance		2
Nat. Sci.	Electives	3	3
Ed. 118	Prin. Sec. Educ.	3	
I.E. 100	Content and Method of Ind. Arts		2
Psy. 104	Educ. Psych.	3	
Totals		16	16
Senior Year			
Eng.2A	Public Speaking	3	
Ed. 133	Phil. of Educ.		2
Ed. 150	Super. Teaching		8
Health 110	Health Educ.		2
I.E. 113	Trade Analysis	2	
I.E. 103	Voc. Educ.	2	
I.E.	Electives in Ind. Arts	6	
Soc. Sci.	Social Science	2	
Elect.	Electives		1
Totals		15	13

SUGGESTED PROGRAMS

San Jose State

Bachelor of Arts degree with Major in the Field of Industrial Arts.

Students who receive the A. B. degree with a major in industrial-arts will receive a Special Secondary Credential in Industrial Arts Education, which entitles them to teach their specialty in the in the elementary, junior high, senior high, and junior college. (8:101)

General and Professional requirements--126 quarter units

Psychology-	- - - - -	13	Units
English-	- - - - -	9	"
Social Science-	- - - - -	21	"
Natural Science-	- - - - -	21	"
Art-	- - - - -	18	"
Education-	- - - - -	6	"
Industrial Arts Educ.-	- -	15	"
Supervised Teaching-	- -	15	"
Physical Education-	- - -	3	"
Orientation-	- - - - -	1	"
Electives-	- - - - -	4	"

Technical requirements- - - - - 60 quarter units

Basic technical requirements:

Automotive transportation	5	"
Woodwork- - - - -	5	"
Electricity- - - - -	5	"
Drawing- - - - -	5	"
Metalwork- - - - -	5	"

The remaining 35 quarter units of technical electives are to be selected from additional work in subjects listed under basic technical requirements and from the following:

Industrial-Arts Design
 Painting and Finishing
 Pumps and Irrigation
 Forging and Welding
 Plumbing and Fitting

Agricultural Mach.
 Metal Craft
 Printing
 Concrete and
 Cement

SUGGESTED PROGRAMS

San Jose State College

Outline of Degree Course with Special Secondary in
 Industrial-Arts (8:102)

Freshman Year					
Course No.	Name	F	W	S	
P.E.	Physical Education	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
1 A-1 B	English Composition	3	3	3	
Speech 2A	Fundamentals of Speech			3	
Ag. 3A 2A	Animal Husbandry				
4A	Dairying, Horticulture	3	3	3	
Soc. Sci.	Social Science	3	3	3	
Art	Art	3	3	3	
Shop Courses		3	3	3	
Sophomore Year					
P. E.	*Physical Education	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
Nat. Sci.	Chemistry 3,4		3	3	
Biol. 11	Hygiene			1	
Soc. Sci.	Social Science	3	3	3	
Psych 55	General Psychology			5	
Art	Art	3	3		
I.A. 133	I. A. Design			3	
Pol. Sci. 3	American Constitution	3			
	Shop Courses	5	5		
	Electives	2	2		

*Prerequisite-High-school chemistry or Chemistry 20 or 1A. Electives should include science to total 21 units.

San Jose State College (Cont.)

Course No.	Name	F	W	S
Junior Year				
Psy. 101	Educational Measurements	5		
Ed. 150	Educational Psych.		3	
Ed. 310	History and Philosophy of Industrial Education	3		
Ed. 106	History of Education			3
Ed. 311	Organization of I.A. Subject Matter		3	
Ed. 312	Content and Procedure			3
	Shop Courses	5	5	5
	Electives	3	5	5
Senior Year (8:102)				
	Orientation	1/3	1/3	1/3
Ed. 153	Principles of Sec. Education	3		
Ed. 145	Student Teaching in Industrial Arts	5	5	5
Ed. 314	Vocational Education		3	
Ed. 313	Vocational Guidance			3
	Shop Courses	5	5	5
	Electives	3	2	2

Authorization for Service

The Secondary Industrial Arts Credential (8:103) authorizes the holder to teach such general and unit shop courses in industrial-arts subjects as are listed on the credential, in the elementary, junior high, senior high, and junior colleges of California.

SANTA BARBARA STATE
COLLEGE

Technical Subjects:

Not less than 40 semester units of technical training must be completed for graduation. Of this number, 20 units are specified requirements while the remaining 20 may be varied according to the interest and outlook of the individual student. This also satisfies (9:109) the requirements of the State Board of Education for a credential to teach within this field.

Specific requirements in technical subjects:

	Units
Automotive work	3
Woodwork	6
Drawing	3
Electrical Construction	3
Metalwork	3
Industrial Arts Design	2
Total	<u>20</u>

FOUR YEAR SUGGESTED COURSE

(9:112)

Course No.	Name	Freshman Year	Units
		First Semester	
Soc. Sci. 1A	Contemporary Society		3
Sci. 50A	Elementary Physiology		3
Eng. 18A	Freshman Composition		3
I.E. 1	Freehand Drawing		2
I.E. 11	Bench Woodwork, or		
	I.E. 7, Home Planning		3
	Freshman Problems		$\frac{1}{2}$
	Freshman Activities		$\frac{1}{2}$
	Total		<u>15</u>

Santa Barbara State College (cont.)(9:112)

		Freshman Year	
Course No.	Name	Second Semester	Units
Soc. Sci. 1B	Contemporary Society		3
Eng. 18B	Freshman Composition		3
I.E. 7*	Home Planning, or		
	I.E. 11, Bench Woodwork		3
I.E. 12	Machine Woodwork and		
	Cabinet Making		3
	Freshman Problems		$\frac{1}{2}$
	Freshman Activities		$\frac{1}{2}$
Sci. 1A**	Inorganic Chemistry		3
Total			16

* Instrument Drawing a Prerequisite.

**High School Chemistry may be substituted, except in case of a minor in science.

		First Semester	
		Sophomore Year	
Psy. 1	General Psychology		3
Math 11	Applied Math		3
I.E. 4	Machine Drawing		3
Sci. 19A	Physics		3
	Sophomore Activities		$\frac{1}{2}$
Pol. Sci. 99	American Institutions		2
Total			14 $\frac{1}{2}$

		Second Semester	
		Sophomore Year	
Econ. 2	Applied Economics		3
Educ. 57	Introduction to Study of		
	Education		3
I.E. 40	Metal Craft		3
Econ. 11	Industrial History of		
	United States		3
Sci. 19B	Physics		3
	Sophomore Activities		$\frac{1}{2}$
Total			15 $\frac{1}{2}$

Santa Barbara State College (cont.)(9:113)

		Junior Year	
Course No.	Name	First Semester	Units
Educ. 175	Educational Psychology		3
I.E. 145	Electrical Construction		3
I.E. 135	Fundamentals of Auto Mechanics		3
I.E. 105	Industrial Arts Design		2
	Technical Electives		5
	Junior Activities		$\frac{1}{2}$
		Total	$16\frac{1}{2}$

		Junior Year	
		Second Semester	
Sci. 6	Indus. Chemistry		2
Educ. 141 I.E.	Vocational Education		2
Eng. 11	Fundamentals of Speech		3
	Electives		3
	Technical Electives		6
	Junior Activities		$\frac{1}{2}$
		Total	$16\frac{1}{2}$

		Senior Year	
		First Semester	
Educ. 173	Secondary Education		2
Econ. 143	Study of Occupations		3
Educ. 190 I.E.	Teaching Problems		3
Educ. 192 I.E.	Directed Teaching		3
	Technical Electives		5
		Total	16

		Senior Year	
		Second Semester	
Educ. 191 I.E.	Content and Methods		3
Educ. 143	Educational and Vocational Guidance		3
Educ. 192 I.E.	Directed Teaching		5
	Technical Electives		3
		Total	14

OREGON

Oregon State College (6:70)

The requirements for admission to first-year or freshman standing conform to the following uniform entrance requirements adopted by all the institutions of higher education in Oregon.

Graduation from a standard high school, which in Oregon involves the completion of 16 units, 8 of which should be required as follows: 3 units in English; 3 units in social science, comprising the state-adopted courses in United States history-civics and socio-economic problems; 1 unit in health and physical education; and 2 units selected from the fields of natural science and mathematics or the field of foreign language.

Graduates from standard out-of-state high schools shall be required to present substantially the same distribution of units. Applicants who are non-residents of Oregon may be held for additional requirements demonstrating superior ability.

State Teachers Certificate

Under the Oregon School Law, the state superintendent of public instruction will (until February 10, 1941) grant a one year teachers' certificate without examination to graduates of the State College who have com-

pleted; (1) a total of 15 term hours of work after graduation, not less than 6 of which must be in education courses which carry graduate credit; (2) a total of not less than 29 term hours in upper division education courses. (This applies only to candidates for Oregon Certificates)

The 4-Year curriculum for Industrial Arts Education--Oregon State College. (6:295)

Course	Freshman Year			(Terms)
	F	W	S	
Pattern Making	3			
Foundry	3			
Engineering Drawing	2	2	2	
English Composition	3	3	3	
Methods in Wood		3	3	
Forging and Welding		3		
Mech. Shop			3	
Military Science	1	1	1	
Physical Educ. *	1	1	1	
Physical, Biological, and Social Science (Lower Division)	3-4	3-4	3-4	
Total	16-17	16-17	16-17	

*General Hygiene (PE150), 2 term hours, is taken one term in place of Physical Education.

Oregon State College (cont.) (6:295)

Course	Sophomore Year			(Terms)
	F	W	S	
Mechine and Tool Maintenance	2			
Fr. Hand Drawing	3			
Arch. Draw. and House Planning	3			
Arch. Draw. or Mach. Draw. or Des.				
Geometry		3	3	
Ind. Arts Design		3		
Sheet Metal			3	
Social Science	4	4		
Outlines of Psychology			6-4	
Bus. Eng. or Jrnl.	3			
Extem. Speak		3		
Parlim. Proc.			3	
Military Science	1	1	1	
Physical Education	1	1	1	
Electives Ind. Arts		2	0-2	
Total	17	17	17	

Junior Year			
(6:296)			
Millwork or Prod. Mach. Wrk.	3		
Auto Mech.	3	3	3
Carpentry or Heat Tr.	(2)or	3	
Wood and Metal Finishing			2
Electives in Ind. Arts	2-0	2	3
Educ. Psych.	3		
Ind. Arts Organ.		3	
Methods and Materials of Ind.Arts			3
Sec. Educ.	3		
Prin. of Teaching		3	
Meas. in Sec. Educ.			3
General Electives	3	3	3
Total	17	17	17

Oregon State College (cont.)(6:296)

Course	Senior Year			(Terms)
	F	W	S	
Pract. Electricity	3			
Gen. Shop and its Problems	2			
Trade Analysis	3			
History of Manual and Indus. Educ.	3			
Educ. Electives	3	3	3	
Stage Craft or Jrnl.		3		
Commerical Woods or Materials of Engr.			3	
Written and Visual Aids		3		
Shop Plan. and Organ.			3	
Superv. Teaching		3	3	
Electives in Ind. Arts	3	2	2	
History of Oregon		3		
Oregon School Law and Oregon System of Education- <u>Total</u>			3	
	17	17	17	

WASHINGTON

Washington State College

Admission of Students from outside the state.

Graduates of accredited high schools outside the State of Washington are eligible for admission to the State College on the same terms as graduates of accredited high schools within the state, provided that they present 16 units distributed as follows: (11:43)

1. A minimum of 3 units in English composition and literature.
2. A minimum of 1 unit in mathematics (algebra, geometry, trigonometry).
3. A minimum of 2 units in social science(econ., history, sociology, political science).
4. A minimum of 1 unit in natural science (botany, chemistry, general science, geography, physics, physiology, biology, zoology) (must involve units in laboratory instruction).
5. Nine additional units in the above divisions or in other high school subjects taken under regular study conditions.

Graduates of un-accredited high schools will submit their record to the registrar for evaluation.

PURPOSES

The courses in the School of Education of Washington State College are planned to serve six classes of Students: (11:43)

1. Prospective principals, supervisors, and

superintendents.

2. Those preparing to teach in junior and/or senior high schools.
3. Teachers and administrators in service.
4. Candidates for advanced degrees in education.
5. Candidates for degrees in psychology.
6. Those who wish courses in education and psychology for their informational and cultural value.

Admission to School of Education

1. Students majoring in psychology or industrial-arts will enroll in the School of Education upon entering the college.

2. During his fifth year, providing that the department requirements for the B. A. or B. S. degree have been met or his academic or teaching major has been completed, he shall be enrolled in the school of education as a candidate for the Ed. B. degree and the Three-Year Secondary Certificate.

A major and two teaching minors are required for the State College Secondary Certificate.

INDUSTRIAL-ARTS

Major Teaching Preparation 30 Hours

Washington State College

			Semester
Drawing and Design			Hours
M. E.	1	Elementary Engineering	
		Drawing	2
Arch. E.	56	Elem. Arch. Drawing	2
	57	Arch. Problems	2
Fine Art	41	Art Structure	2
	42	Art Structure	2
Total			10
Wood and Metal Work			
Ind. A.	7	Elementary Woodwork	2
	8	Elem. Cabinet Making	2
	12	Adv. Cabinet Making	2
	15	Art Metal	2
	22	Care and Management of tools	
	120-	and equipment	2
		Industrial Arts Problems	2
Total			12
Methods of Teaching			
Educ.	113	Methods of Teaching	
		Industrial Arts	2
Electives		(Ind. Arts) Auto Mech., Mach.	
		Shop, Forg. and Welding	6
Total			8
Minor Teaching Preparation 18 Hours			
M.E.	1	Elem. Engineering Draw.	2
F.A.	41	Art Structure	2
Ind. Arts	7	Elem. Woodworking	2
	8	Elem. Cabinet Making	2
	12	Adv. Cabinet Making	2
	15	Art Metal	2
	22	Care and Management of Tools	
		and Equipment	2
	120	Industrial Arts Problems	2
Electives		Auto Mech., Mach. Shop,	
		Forg. and Welding	2
Total			18

COMPARATIVE COSTS AT THE SEVERAL
SCHOOLS COVERED BY THIS STUDY

The cost for a college education is a hard subject to state specifically in dollars and cents and have these statements remain true over any length of time. General statements as listed in the college catalogues are the basis of the following data.

CALIFORNIA

Chico State College (3:28)

	Regular Tuition	\$ 6.50*
	Student body fee	8.50
	Library	1.00
New Students		
	Physical Education	3.00
	Locker	.25
	Personnel test	1.00
	Picture	.25
	Record card	.10
Departmental Fees		
	Biology, each Lab. Course	1.00--5.00
	General Chemistry (each Sem. taken)	5.00
	Organic and Household Chemistry	3.00
	Ind. Educ., each Lab. per unit	1.00
	Physical Educ. Laundry fee	.75
	Physics Lab., (each Sem.)	1.00
Graduation Fees		
	Diploma	2.50
	Credential (each)	3.00
	Cap and Gown	3.00

*

Minor students whose parents live outside of the state of California must pay a registration fee of \$75.00 for the first semester and \$37.50 for each subsequent semester.

From this list it will be seen that the average cost, including all tuition and fees, at Chico State College will, over a four-year period, average about \$50.00 a school year, for California residents.

Room and board will average around \$35.00 per month, under certain conditions it may be possible to reduce this figure.

Books and school supplies should not cost over \$30.00 per school year.

SANTA BARBARA STATE COLLEGE

(9:18)	Regular tuition	\$ 6.50
	Laboratory fees per	
	unit	1.00
	Student body fee	10.00
	New Students	
	Aptitude test	.50
	English X	5.00
	Graduation Fees	
	Diploma	2.20
	Credentials (each)	3.00

Tuition, fees, books and supplies should average over a four-year period, about \$80.00 per school year.

*Minor students whose parents live outside of the State of California must pay a registration fee of \$75.00 for the first semester and \$37.50 for each subsequent semester.

The cost of private board and room in the city of Santa Barbara, for students, averages between \$30.00 and \$40.00 per month. This may be lowered by batching or living with relatives within the city.

SAN JOSE STATE COLLEGE

Tuition and Fees (8:31)	First Quarter	Year
*Registration and student body fees	\$ 9.00	27.00
Personnel test (including English A)	2.50	2.50
Laboratory fees	3.00	9.00
Physical Education fees	.50	1.50
Books	7.00	15.00
Miscellaneous supplies	5.00	15.00

Board and room in private houses may be obtained at an average cost of from \$25.00 to \$40.00 per month. The personal expenses of a student depend upon the student himself.

* Registration and student body fees for non-residents of California: Each quarter for the first year \$42.17. After the first year, each quarter \$29.67. Three quarters constitute a year.

OREGON

Oregon State College

Tuition and Fees (6:84)

	Term	Year
Tuition*	\$10.00	30.00
Laboratory and Course fees	11.00	34.50
Incidental fee	5.50	16.50
Building fee	5.00	15.00
<hr/>		
Total Oregon residents	32.00	96.00
Total Non-residents	72.00	216.00
Breakage fee (payable once each year)	\$5.00	
Matriculation fee	5.00	
Graduation fee	6.50	

Living Cost	
Dormitory living expenses	Per month
Double room	\$30.00
Single room	33.50
Private board and room	24.00 to 35.00

Student Expenses

Books and supplies average around \$35.00 a year. Personal expenses vary according to the tastes of the individual and must be judged accordingly.

* A non-resident student pays \$50.00 instead of \$10.00 for the regular tuition each quarter.

WASHINGTON

Washington State College

Tuition and Fees (11:34)

*Tuition		Semester	
Residents		\$10.00	
Non-residents		75.00	
Gen. Deposits		5.00	
Military uniform and equipment		15.00	
General Fees			
General Fee		9.00	
Assoc. Students		8.00	
Building Fund		5.00	
Class Dues		.50	
Welding Fee		6.50	
Other Charges			
Certificate fee (teaching)		2.00	
Diploma (A.B.)		5.00	
Placement fee		3.00	
Board and room			
Fraternity Houses	Per Month	\$30.00	to 40.00
Private, average	" "	20.00	45.00
Supplies			
Books etc.		11.00	
Laundry (month)		3.00	
Gym suits		1.00	

* Non-residents of Washington pay a fee of \$75.00 per semester instead of the regular student fee of \$10.00.

OPPORTUNITIES

When a person plans to spend four to five years of his life preparing for a specific vocation, he expects certain returns from his investment. Yet to state that four or five years from now a position will be ready for a graduate is a very bold statement to make. It is true that each year there are available a certain percentage of positions in the industrial-arts teaching field. If the graduate has faithfully prepared himself during his college education so that he may have strong recommendations for character, for skill, and for ability as a teacher, there is a good possibility that he will be placed.

The industrial-arts teacher has a wider scope of opportunities in the teaching field than others. The teaching credentials cover the elementary, junior high, senior high, junior college, and college levels. Within these levels an industrial-arts teacher can, by study during summer vacation, advance to higher positions when the opportunity comes.

Prospective teachers must remember that teaching salaries are not the highest in the professional groups. On the Pacific Coast the salaries of industrial-arts teachers in high schools range from \$1000 in the very small schools, to about \$2900 in the larger cities.

Teachers who like their work feel that the

advantages outweigh the disadvantages and that teaching industrial-arts is a fascinating and satisfying occupation.

Considering the teaching profession as a whole, the following quotation is appropriate here. It represents one point of view.

"Considering the preparation and the responsibilities, the pay is inadequate. The work is a nervous strain. Much time is spent outside of school in preparing lessons and correcting papers. The teacher deals with underdeveloped minds. The tendency is to become dictatorial. Chances for advancement are limited and politics and favoritism sometimes interfere with reappointments, promotions, and needed reforms.

"Other disadvantages are that the teacher must submit to personal criticism; the opportunities for renown are rare; large classes and fixed teaching procedures are too often the rule, and provisions for pensions and tenure are inadequate." (4:5)

OPPORTUNITIES FOR SELF HELP

Many students are not able to completely finance their college education and need help during the school year. All the colleges and universities studied provide employment service for students who need this aid. They also recommend however that to obtain the highest possible benefit from a college education a student should have sufficient funds that the necessity for earning while in college is held to a reasonable figure.

SCHOLARSHIPS AND LOANS

Many of the colleges and universities studied

have a limited number of scholarships for needy students. Some are for entering freshmen and some for sophomore and junior students. Selection of candidates for these scholarships is based on scholastic and institutional activities, personal character, and financial need. Applicants for these scholarships should give all details to the registrar in writing, if full information is desired.

STUDENT LOANS

All the colleges and universities studied have loan funds available for students. They are for the service of students, individually, in such amounts and for such duration as circumstances may permit. Preference is usually given to students who have spent some time at the college or university, and have made a commendable showing in scholastic work.

CHAPTER IV

SUMMARY AND CONCLUSIONS

A student looking forward to a college education and interested in industrial-arts should consider carefully the six topics covered in this study before making a final choice of the institution he will attend.

The information available on all the institutions within his geographic area should be studied carefully, and if possible it would be advisable to visit each one or at least the ones of his choice to get a first hand picture of the schools.

If a person plans to teach within a certain region, he should choose a teachers college located in that general area.

From a financial point the location of the college or university may influence his choice because of the cost of travel to and from the institution. Size of the school as to the number of students is significant only up to the point where the school has sufficient enrollment to warrant a strong staff and strong financial support. Beyond that, large enrollments may become a real detriment to good work.

The institution selected should have a reputation in surrounding states as a good teacher-education institution. This should be based upon how well the cur-

riculum of the school meets the certification requirements of the other states, and the number of its graduates actually placed in the area in question.

By selecting his school with care the student may be eligible upon graduation, for placement in any of several states.

Cost of tuition, living, and books or supplies may cause a division of choice between two schools. All the colleges and universities studied recommend that, if at all possible, the student be financially able to attend school without having to work or support himself while in school.

During his undergraduate period opportunities for self-help may be of great value and the employment bureaus of the colleges and universities have performed a great service to many needy students. In this same period scholarships and loans are of very great importance to needy students. Some institutions allow time payment on tuitions extended over the term of work; others will take a signed note for tuition (with low interest rates) so the student can go to school and return the loan after graduation.

During the senior year in college the student will no doubt have a very prominent subject on his mind--
PLACEMENT. By selecting an institution with a fine curriculum, large enough in size to support a large staff

and an adequate physical plant, a rating of good standing among other states, and an efficient placement bureau, the graduate has a better and wider scope for placement upon graduation.

Students thinking of future vocations would like to know the duties of the industrial-arts teacher so that they can compare their interests and abilities with the requirements of the profession. In industrial arts the duties have been broken up into responsibilities to the School, the Community, and the Home.

All three divisions are very important because for efficient teaching all have to be served.

CONCLUSIONS

In conclusion the author wishes to list a series of steps for a student interested in "Industrial Arts Teaching as a Vocation" to keep in mind when determining where to go for his industrial-arts teacher education program.

1. Select several outstanding institutions within his region which provide an educational program for teaching of industrial-arts.
2. Then assemble as much information on each institution as it is possible to secure on the following topics:
 - (a) Rating of the institution; inquire from counsellors, principals, etcetera for their opinion of these institutions, from a professional view point.
 - (b) Find out how far the curriculum of the institution goes toward meeting teaching certification in near by states.
(industrial-arts curriculum)
 - (c) Compare costs at the several institutions.
 - (d) Inquire about the placement service, and whether financial help is available if needed.

- (e) From the general list of duties of an industrial-arts teacher, make a self analysis to see if your interests and present abilities meet the requirements of this field.
- (f) After your choice has narrowed to one or two institutions make a personal visit to the institutions for a first-hand appraisal of the physical plant, and the atmosphere among the classes, etcetera.

APPENDIX

104 N. 6th St.

Corvallis, Oregon

March 26, 1940

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Dear Sir:

It is the purpose of this study, "Industrial Arts Teaching as a Vocation", to assemble and interpret all the significant data available for the guidance of high school graduates interested in the field of Industrial Arts.

Please read over the list of proposed "check points" (next page) and rate them on a scale of 1 to 10, as in your opinion their validity and importance to the study may appear.

Feel free to omit any unit or add to the list. Any suggestions or criticisms can be added to the back of the blank or in the margin.

Thank you

Henry E. Davis

(2)

Check Points

	Low	High
	1.....5.....10	
1. Institution providing the program of Industrial Arts Teacher Education.	.	.
(a) Location.
(b) Size.
2. Rating of the Teacher Education program, with reference to the number of states in which the graduates can secure teaching credentials on the basis of the usual curriculum offerings.	.	.

3. Certification requirements for Industrial Arts credentials of states in the area to be studied. (Calif., Oregon, Wash.)	.	.

4. Cost for Student.	.	.
(a) Tuition.
(b) Living.
(c) Books, supplies.
5. Opportunities	.	.
(a) Upon graduation.
(b) Self help.
(c) Scholarships.
6. Duties of an Industrial Arts Teacher in the School and Community.	.	.

Remarks:

RESULTS

Check Points

	110
1. Institution providing the	.	.
program of Industrial Arts	.	.
Teacher Education.	.	.
(a) Location.	.	.
(b) Size	.	.
2. Rating of the Teacher Educ-	.	.
ation program, with reference	.	.
to the number of states in	.	.
which its graduates can secure	.	.
teaching credentials on the	.	.
basis of the usual curriculum	.	.
offerings	.	.
3. Certification requirements for	.	.
Industrial Arts credentials of	.	.
states in the area to be stud-	.	.
ied. (Calif., Oregon, Wash.)	.	.
4. Cost for student.	.	.
(a) Tuition.	.	.
(b) Living.	.	.
(c) Books, supplies.	.	.
5. Opportunities.	.	.
(a) Upon graduation.	.	.
(b) Self help.	.	.
(c) Scholarships.	.	.
6. Duties of an Industrial Arts	.	.
Teacher in the School and	.	.
Community.	.	.

Remarks:

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