

AN ABSTRACT OF THE THESIS OF

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Abstract Approved:-----
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The object of this study was to obtain as accurate and complete information as possible regarding the careers of the graduates of the Industrial Arts Department, and the relationship of their work to courses pursued in the College; to determine the means through which they obtained employment; and to request their opinions regarding various phases of their education. It was also the purpose to prepare recommendations on various matters relating to industrial arts graduates, their employment, and the continuation of their studies after graduation.

This study deals primarily with undergraduates because the graduate field involves problems which are beyond its scope. The information which forms a basis for the study was obtained by means of a questionnaire consisting of twenty-two parts. It was sent to 195 graduates of the Department. There have been 209 men graduated from the Department since its organization; eight of that number have died, and the location of six others is not known.

There have been 181 graduated from the Industrial Arts Education program and 28 from Industrial Administration. Questionnaires were sent to a mixed group of graduates from the College, who are now teaching industrial arts work, of whom 42 are graduates from the School of Education with a major in Industrial Arts.

The total number of questionnaires distributed was 250. Graduates of the Department returned 139 or 71 per cent. Twenty-nine returns, or 52 per cent, were received from the mixed group. Sixty-seven per cent of the total number of questionnaires were returned.

The Department was organized in 1913 with H. C. Brandon directing its work. He continued in that capacity until 1927 when ill health caused him to retire. G. B. Cox then assumed control of the Department and remains its director. G. A. Covell, Dean of the School of Engineering, recognized at an early date that training different from the traditional work of the engineer was necessary for the teacher of manual arts, which were growing in popularity in grade and high schools. It was his interest in providing well-trained teachers for such positions that led to the organization of the Industrial Arts Department.

The information received from the questionnaire has proved valuable. Most of the returns contained the information which was sought. The returns disclosed the amounts of the salaries of the graduates. The figures

show that the rise in the salary scale for teachers is usually gradual and proportional to the years of service. More than half of the graduates obtained their first teaching position through the College Placement Bureau. The percentage of industrial arts teachers who like their work is very high and the majority of them continue their studies after graduation. Their studies often pertain to the problems of school administration, but many have selected hobbies and devote their spare time to them.

The data show that woodwork and drawing are taught more frequently than other subjects. The other industrial arts courses showed no noticeable grouping.

A request was made that the graduates name courses that had been omitted from their college program and which had since that time become a necessary part of their daily work. Many subjects were named among which were printing, accounting, typing, and supervised teaching. Several of the older graduates named work which has become part of the program since they were graduated. Those who named supervised teaching had been given some training in it, but the request was for a more intensive training in that phase of the program.

The graduates were asked to state the extent to which they were self-supporting while they attended college. More than 45 per cent of them were entirely self-supporting. Another 33 per cent were more than half self-supporting. These data indicate that financial problems create

difficulties for most of the students.

Ninety-seven per cent of the graduates who made returns stated that they were glad that they had graduated from the Industrial Arts program. The majority of them were satisfied with their present positions, but many indicated that they were satisfied for the present only and were alert for better opportunities. Several who were teaching expressed the definite hope of leaving the actual field of teaching and attaining supervisory or administrative positions.

A request was made that the graduates express their opinions of the shortcomings of their college training, and assign reasons for them. Several probable reasons were listed in the questionnaire and the ones selected could be indicated by a check mark. The reason most frequently marked charged the College faculty with failure to show the probable relationship of the program to the future work of the students. It is not the intention of the author to disregard the returns, but the whole burden of proving the value of subject matter need not be laid to the teachers.

Another reason which was frequently given accused the teachers of not giving sufficient attention to the difficulties and problems of the students. It is probably true that faculty members do not give sufficient attention to things of that nature. The majority of students resent faculty interference in their affairs and seldom request help or, in any manner, make known to the staff that diffi-

culties have been encountered. Even though offers of aid go unheeded, every teacher should attempt to gain and hold the confidence and friendship of the students.

The data of this study justifies the following recommendations:

1. That closer contact be established and maintained between the students and teachers of the high schools, and the teaching staff of the Industrial Arts Department.
2. That a means be devised whereby some agency, preferably within the Industrial Arts Department, be given the responsibility of providing an employment service for the Industrial Administration graduates similar to the Bureau that functions in that capacity for the graduates who plan to enter the teaching field.
3. That the department establish as a policy that its teachers make direct contact with industry through the medium of actual employment in the fields of work in which they give instruction to students.
4. That the staff members, in their capacity as advisers, direct the students into classes where training may be had in the subjects where a deficiency now exists as shown by the results of this study.
5. That an effort be made to reduce the number of theoretical courses in education, to revise the necessary ones so that they deal with practical problems and do not merely discuss education.
6. That a state-wide supervisory authority be established to aid teachers of industrial arts work so that the needs of both students and teachers may be served to better advantage.
7. That a plan be devised whereby some amount of graduate credit can be earned by graduates of the Department who are teaching and desire to increase their knowledge and skills in the laboratory studies.
8. That an increase in the standards of supervised teaching be made so that each new teacher may be more fully trained to meet the problems of his profession.

A FOLLOW UP STUDY OF INDUSTRIAL ARTS GRADUATES
OF OREGON STATE COLLEGE SINCE 1915

by

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A FOLLOW UP STUDY OF INDUSTRIAL ARTS GRADUATES OF OREGON STATE COLLEGE SINCE 1915

CHAPTER I

INTRODUCTION

Every institution is or should be interested in the welfare of the members of its student body during the time of their attendance as well as when they reach the status of alumni. Too frequently the contact between the schools and their graduates is lost soon after graduation and as time goes on it becomes increasingly difficult to reestablish that relationship.

The progress and reputation of a higher educational institution is largely dependent upon the success of its graduates to fulfill the expectations of their employers or in their preparation to make noteworthy progress in their more mature years. Its future course must be based upon the careers of its alumni; their difficulties and accomplishments require careful analysis, study, and evaluation. Within each major division of a school are the smaller units or departments and the formulation of policies within each division is delegated largely to a responsible representative. The accuracy with which the subject matter of a curriculum is selected is measured in the ability of its product, namely, its graduates.

The graduates from the department of Industrial Arts

have, to a large extent found employment in grade and high schools throughout the western states, and as junior executives in industry. A smaller number are engaged in rather varied types of employment.

In this study an effort has been made, through the medium of a questionnaire, to obtain a statement of the opinions of the graduates of the department concerning the degree to which the department has accomplished its purposes.

The Industrial Arts Department of Oregon State College has gained an enviable reputation. In the undergraduate field, it ranks as one of the five leading schools in the United States. Its leadership is recognized widely in the western sections of the United States, while along the Pacific coast it is conceded to be the foremost in the field. Its enrollment includes students from most of the western states, Alaska, Hawaii, and Canada.

The department is proud of the fact that all of the graduates from its teaching curriculum who wish to teach are so employed and the remainder could be if they desired, for the demand usually exceeds the number of available graduates.

With the revival of normal industrial conditions, the trend of school administrators is to increase the facilities of the existing industrial arts programs in the secondary schools and to install the work where it does not exist.

This portends a bright future for the Department and a necessity for continued growth based, to a large degree, on information such as this study will endeavor to reveal.

The graduate work of the Department, though instituted quite recently has become widely known. It is the leader, among the schools of the Pacific coast, which offer graduate study in industrial education subjects. The graduate program functions during the regular school year as well as during the summer, but the enrollment during the summer session is greater due to the opportunity it offers teachers who are employed during the regular teaching period to continue work on their graduate programs and, thereby, to meet the increasingly rigid requirements for teacher certification.

Purpose of the Study

The purpose of the study may be outlined as follows:

1. To compile and record a brief history of the department of Industrial Arts since its organization in 1913.
2. To list in alphabetical and chronological order the names of all graduates of the department.
3. To obtain and record certain information from each of the following groups:
 - a. Graduates from the curriculum in Industrial Arts Education.
 - b. Graduates from the curriculum in Industrial Administration.
 - c. Graduates from the School of Education with an Industrial Arts major or an incomplete Industrial Arts major.

4. To evaluate these data for the purpose of improving the training of future graduates.
5. To make recommendations for the benefit of the students and the department.

With reference to the first two items above, the question frequently arises as to the year when a student was graduated, whether he was enrolled in the industrial arts or industrial education program, and if he were a graduate from the School of Education or Engineering and Industrial Arts. To date no departmental record of graduates exists. During the last twenty-five years, there has been a complete change of staff, with the consequent loss of contact with the graduates. In this respect, this study should be of considerable value to the staff and graduates alike.

The requests made of graduates for information concerning their present salaries, types of employment, opinions of the training received while at Oregon State College, and their evaluation of that training, based on from one to twenty-five years of experience in teaching or in industrial pursuits, should furnish a rather extensive compilation of data from which rather reliable recommendations may be made.

Method of Procedure

To obtain the names of all graduates of the department, an extensive search of records in the office of the college

Registrar and the alumni office was made. The resulting list probably is as accurate as is possible to obtain and contains the names of graduates beginning with the class of 1915, including the class of 1939 and all who graduated prior to December 31, 1939.

A copy of the questionnaire used by The Society for the Promotion of Engineering Education in a similar study made by it some years ago was obtained. The secretary of the Society advised the writer that the study had been of great value. The questionnaire* which was used in this study was patterned somewhat after the Society's questionnaire.

A letter of transmittal was enclosed with each questionnaire, stating the reasons for the study. The writer also enclosed one each of the curriculum charts** showing the present program in Industrial Arts Education, and Industrial Administration. The graduates who had left the institution five or more years ago were enabled from a study of the graphs to become partially acquainted with the present program of the department.

The questionnaire consisted of twenty-two sections, some of which required more than one answer. An effort was made to formulate the questionnaire so that little writing was necessary to answer the questions. A request

* Copy in Appendix A.

**Copy in Appendix B.

for criticisms and suggestions was included on the last page.

Before the questionnaire was mimeographed in its final form, copies were submitted to a number of individuals so that their reactions could be studied. Their comments and answers indicated the necessity for revision of some questions. When the changes had been made, copies were submitted to a different group and additional changes were made. The questions in the questionnaire then seemed rather easily understood.

Scope of the Study and Groups Represented

The records of the College Registrar show that, up to December 31, 1939, there had been 209 graduates from the Industrial Arts department. Of this number 181 were graduated from the teacher training program and 28 in Industrial Administration. Questionnaires were sent to all living graduates who could be located. A total of 195 were sent.

Based upon the most reliable information obtainable, the records indicate that eight of its graduates had died since the department was established.

Questionnaires were sent to all for whom an address was available. In several instances the addresses were known to be old and probably incorrect, but, in an effort

to obtain the desired information, they were used. Of this group two were returned by the postal authorities with the notation "address unknown." At the time the questionnaires were mailed, the addresses of six graduates were unknown.

In addition to the above groups, questionnaires were sent to 55 men, some of whom were graduated from the School of Education, and others were not. The basis for the selection of this group was the interest the individuals have shown in the teaching of Industrial Arts subjects. Of the group 42 are graduates from the School of Education with a major in Industrial Arts. The remaining 14 were graduated from other schools or departments on the campus. They are at present devoting a large portion of their time to educational work.

The total number of questionnaires distributed was 250. Graduates of the Industrial Arts Department returned 139 questionnaires, or 71 per cent of those distributed. The Industrial Arts Education group returned 117, or 64 per cent and the Industrial Administration 22, or 78 per cent. The graduates were divided into two groups: 1915 to 1927 and 1927 to 1940. The first group contains 90 graduates. Questionnaires were sent to 77 and 47 returns were received for a percentage of 61.

The second group contains 119 graduates and 118 ques-

tionnaires were sent. Returns from this group numbered 92 or 78 per cent.

Of the questionnaires sent to the mixed group of 55 who teach industrial arts subjects, but are not graduates from the department, 29 returns were received, or 52 per cent.

A total of 168 returns were received, or 67 per cent of all that were sent.

Value of This Study to the Industrial Arts Department

Prior to the undertaking of this study, no adequate records were available which gave a complete list, either alphabetical or chronological, of the graduates from the department. As a consequence, it has been difficult to gain information concerning these alumni. It was not deemed wise to include in these records the present addresses of the graduates because due to a normal shifting of personnel the list would rapidly become obsolete. The records of the Alumni Office could better serve that purpose. The list of graduates* included will frequently prove of great value to students as well as the staff of the department.

During the twenty-seven years of the Department's

* Copy in Appendix C.

existence, no authentic study has been conducted to ascertain the adequacy of its program.

It is often desirable to know what percentage of graduates from the department remain in the work for which they were trained and to know when a change is made from that work to other kinds of employment. Another source of valuable information is that which shows where the graduates are located.

The question of salary is always of great interest. Tables which show the salaries paid to teachers and the knowledge that certain cities and states which set rigid training requirements for prospective teachers are ready to compensate them accordingly will be of value in that they indicate that the requirements are justified.

The constructive criticisms that so many of the graduates have added to their answers in the questionnaire will prove invaluable. It has been gratifying to note that many of the suggestions made by early graduates have been included in the present curriculum of the department.

Comments upon the work of the department and the opinions, on other matters of graduates who are now in administrative positions, which enable them to speak with authority concerning the ability of the graduates, comprise a body of valuable information.

At times an executive may contemplate a change in

departmental policy and lack only a sufficient number of confirming opinions to lend assurance to the adoption of what is hoped will be an improvement. The expressed opinions of those in service in the field should provide the necessary authoritative and confirming statements. This study has accomplished this in more than one instance.

All values of the information gathered cannot at present be interpreted and collated. Continued study of these data, based upon new problems as they arise, may and probably will prove of value to the department, to its students and graduates, as well as to the College.

Other Similar Studies

Frequently members of the teaching staff and others wish information concerning students who have been graduated. The need for data such as are contained in this thesis become apparent. Investigation disclosed that the Society for the Promotion of Engineering Education had carried on a very extensive investigation concerning engineering education. The work had continued for six years, and in 1930, the report was published.

Study of that report revealed that its field of investigation had been very wide and the results outstanding. Upon request the Secretary of the Society loaned

this writer the only copy of the Society's questionnaire.

The object of the Society's study was to obtain as accurate and complete information as possible regarding the careers of engineering graduates and the relationship of their work to courses pursued in college; to determine the means through which they obtained first positions; and to obtain opinions regarding various phases of their education. It was also the purpose to prepare recommendations on various matters relating to engineering graduates, particularly in relation to their employment and to the continuation of study after graduation.

The Society's study showed that graduates in engineering obtained their first positions in the following manner: through faculty or alumni of the college, 16 per cent; through work done prior to graduation, 15 per cent; through college or employer, 45 per cent; personal initiative, 14 per cent; others, 10 per cent.

The reasons given by the graduates for the selection of their first positions are as follows: work closely associated with college program, 49 per cent; apparent good opportunities, 25 per cent; other reasons, 26 per cent.

Recent graduates of engineering schools were asked to indicate the value which they assigned to the cultural studies that were included in their college programs. Nearly 60 per cent indicated their belief that cultural studies

were of "considerable" or greater value to them. Approximately 43 per cent reported that they had continued their study and interest in cultural subjects.

The study showed that among engineering graduates there is a considerable effort made to continue their education after leaving college. Approximately 75 per cent of them are in positions which require study; 56 per cent have continued to study work closely related to the field of their college preparation. Seventy-six per cent of the engineering graduates were satisfied with their positions; 95 per cent like their work; 97 per cent are glad they studied engineering.

More than one-fourth of the engineers reported that they have studied under the supervision of their employers, while nearly 60 per cent replied that they have studied independently of their employers' supervision or direction.

Another study was very recently conducted by the Bureau of Occupations, University of California, at Los Angeles, in cooperation with the California State Department of Education. The results of the California survey are to be published this spring.

Limitations of the Study

Some graduates of the Department have now been away from the College for nearly twenty-five years. This factor

has reduced the percentage of returns.

Much attention was given to formulating questions and statements in the questionnaire and explicit directions were given as an aid to the person answering them. However, where one answer and only was requested several were sometimes given. In some instances where an indication of degrees of importance was requested, the answers given were equal in value and the results were not entirely satisfactory.

CHAPTER II

A BRIEF HISTORY OF THE
INDUSTRIAL ARTS DEPARTMENT

The purpose of this chapter is to present in chronological order some of the most important events pertaining to the Industrial Arts Department from its organization in 1913 to the present date.

The dates, records of events, and facts enumerated were obtained from a study of the early biennial reports of the Dean of the School of Engineering, the commencement programs, beginning with the first class that was graduated from the department, and from conversations with faculty members who were in service on the campus, prior to the formation of the Industrial Arts Department.

At the commencement in 1915, the first class was graduated from the Industrial Arts Department. There were four graduates. It is necessary, therefore, to trace the department's work from an earlier date.

The Morrill Act of 1862 was instrumental in the promotion of shop work in colleges, and among the activities that were offered at an early date were the following: woodworking, blacksmithing, drawing, and printing. In 1908, all students from the School of Agriculture were required to study carpentry and blacksmithing through at least one year. At that time more than half of the entire

student body of 1156 was at some time, during the year, enrolled in classes in the engineering shops.

Prior to the organization of the department, a two-year course called mechanic arts was offered under the guidance of the Dean of the School of Engineering, but no degree was granted.

The President's Biennial Report¹ of 1906-1908 states that a two-year course in mechanic arts had been organized, but that it did not lead to a degree. During the first year of its existence, the course enrolled 53 students. It was designed to aid those students who desired to enter the skilled trades as craftsmen. Its purpose was the training of mechanics instead of engineers. The two years of work in the department stressed the careful instruction in handcraft and was intended to broaden the general education of the students by including English, mathematics, and general science in the group of required subjects.

In the same report, a request was made for the construction of a foundry which was to produce castings that were required for machines and other apparatus that could be made in the machine shop.

Apparently no events of unusual interest transpired during much of the biennium with one important exception.

1. Oregon Agricultural College Biennial Report of the President of the College. 1906-08. p. 41-42.

A study of the next biennial report shows that the request made by the Dean of Engineering and of the President of the College was granted. A new building, equipment, and facilities had been provided and were functioning to the satisfaction of all as may be noted from the Dean's report--1910-12.

The item of \$12,175.84, charged to the Mechanical Engineering Department includes the complete equipment for the foundry, equipment for the manufacturing wood shop, and for a plumbing and steam fitting shop.

One of the most notable improvements in the shops during the biennium was the construction of a new shop building 35 x 120 feet. This building contains the foundry, which has been fully equipped with cupola, brass furnace, coke ovens (core ovens) moulding tools, and a pipe fitting and plumbing shop, principally for the use of the College in making repairs and improvements. A woodworking shop equipped with machinery for manufacturing equipment for the College is also located in this building.

The foundry had accomplished all that was expected of it. It makes the shop work instruction in the engineering departments complete. In connection with the woodshop and the machine shop it greatly facilitates the construction of apparatus and equipment for the mechanical and other departments of the College.

A report from Mr. Ridenour (instructor in the foundry) shows that 16,350 pounds of sound castings were produced last year. The actual loss in melting was three per cent, and the melting ratio was 5.3 pounds of iron to one pound of coke. This is regarded as a very satisfactory result from the small plant operated by the students.²

2. Oregon Agricultural College Biennial Report of the President of the College. 1910-12. p. 41.

In 1910, Professor E. P. Jackson, introduced a course which was designed to prepare teachers of the Industrial Arts. The work was sponsored by the Department of Mechanical Engineering. Cooperating with Professor Jackson was Professor Ressler, and the result of their work was a program embodying the care and use of shop equipment, methods, and materials of industrial arts.

The first training course for Industrial Arts teachers under the direction of Professor Jackson, and the work offered for its students from the School of Agriculture severely taxed the facilities of the shops, a condition which was more acute in the wood shop.

Of this Dean Covell said in the 1910-12 report:

The shops, which four years ago were thought to be ample for years to come are already congested in the woodworking department so that the efficiency of the work is threatened.³

The quotation below, taken from the same report, is of particular importance in that it states the problem clearly. With almost prophetic vision, Dean Covell predicted the need for Industrial Arts teacher training, recognized the broad scope that the work should have, and wished to give it a place in the School of Engineering.

Industrial Arts.

The rapid development of the high school system

3. Ibid., p. 48.

of the State and the introduction of agriculture, domestic art, and manual training as required subjects in these schools, has created a strong demand for teachers who are qualified to take charge of this work.

It is very doubtful if the graduates of our regular courses of study are prepared to take up the teaching of these industrial subjects in a professional way. A graduate of an engineering course would surely lack the special training in pedagogic subjects to make him a successful organizer, or a teacher of manual training work to the immature pupils of the grades and high schools. It seems to me that we have a legitimate field here which requires our close attention. On the whole the equipment required for the mechanical side of this work is extensive and costly. But we already have most of it in use by our regular engineering students for an entirely different purpose. As shown in the departmental report, Professor Jackson estimates that \$800.00 spent for additional equipment would put us on a good working basis for undertaking this work. And for the next two years very little, if any, additional teaching force would be required. It might be desirable to employ a man to do extension work in this particular field; to attend institutes and school meetings; to visit schools where the work was being organized and give advice and assistance to those in charge. I believe the College would by so doing establish a close relation with the high schools which would be of mutual advantage to the people of the State, the schools, and the College.

I am making the suggestion with full knowledge that a large part of the work would necessarily fall outside of the School of Engineering, and wish to say to those interested that we are ready to cooperate with them in promoting and developing this work.⁴

The suggestions embodied in the above quotation are as pertinent today as they were when they were

4. Ibid., p. 46.

made. By recognizing that there is a difference in the training of the engineer and the teacher of industrial work, an important step forward had been made and the results have shown the wisdom of Dean Covell's plan. Today we have accepted the fact that the teaching of industrial work in schools constitutes a large and important division of secondary education.

The report suggests another item of major importance, one which the State of Oregon has not, after these many years, adopted as a policy. The Dean noted that there was not a close relationship between the College and the high schools. The text of his report indicates that he saw the possibility of the teacher of industrial subjects acting as an envoy of the College, particularly of the School of Engineering. Through the advice and guidance of a shop teacher, many boys of high school age would develop an interest in the engineering type of training and express a desire to attend an institution where such training could be obtained. Dean Covell expressed the desirability of employing a man to do extension work in industrial arts, to visit schools and to aid in the organization and planning of the industrial program in the public schools.

It should be further stated here that the plan for extension work and state-wide supervision of industrial

arts work is still an unattained goal in this State.

During the years prior to 1913, the catalogue refers to this type of work as "shop work", and each course is termed as one of the mechanic arts courses. No mention is made of Industrial Arts. The work offered included woodwork of various types, blacksmithing, steamfitting and plumbing, machine shop practice, and foundry practice.

In the catalogue for 1913-14,⁵ the first mention of Industrial Arts is found. The equipment belonged to the School of Engineering.

It further states:

The courses in Industrial Arts are designed to meet the needs of those who are preparing to teach or to supervise manual training in the elementary grades, and in the high schools of this State. They are open as electives, however, to other students having the necessary preparation to take up the work, subject to the approval of the deans.

In 1913, the Industrial Arts Department with a major curriculum was established with Professor H. C. Brandon as head.

A section of the biennial report of 1912-14,⁶ reads as follows:

As the Industrial Arts Department is now organized, it includes all of the shop instruction given in the College. It also offers a degree

5. Oregon State Agricultural College Catalogue, 1913-14, p. 252.

6. Oregon Agricultural College Biennial Report of the President of the College, 1912-14. p. 72.

course in Industrial Arts for those who wish to prepare themselves to teach or supervise manual training work in the high schools or lower grades of the common schools. It is hoped that the transfer of the Industrial Arts course from the department of Industrial Pedagogy will unify and strengthen the work, without in the least detracting from the value of the pedagogic training afforded by the course.

The work offered in the shops at that time included:

| | |
|--|---------------|
| Manual Training (elementary and advanced) | Patternmaking |
| Art Metal Work | Forging |
| Wood Turning | Machine Shop |

Foundry Practice

In the next biennial report (1914-1916) the following studies were shown:

| | |
|-------------------------|-------------------------|
| Vocational Drawing | Foundry Practice |
| Carpentry | Machine Shop Practice |
| Cabinet Making | Electrical Construction |
| Patternmaking | and operation |
| Forging | Manual Training |
| Plumbing | Woodwork |
| Tool Making & Tempering | Wood Turning |
| Blacksmithing | Dairy Mechanics |
| Hammered Metal Work | Shop Drawing |

The Biennial Report⁷ - 1914-1916 - supplies the following facts:

The Industrial Arts Department offers a four year degree course for students who wish to prepare for teaching manual training. Results obtained during the past two years fully justifies the establishment of the course. Professor Brandon's report shows that thirty men were placed in teaching positions where manual training was the major requirement. The average initial salary of these men was more than \$100 a month. Moreover, at the end of this year there are sixteen positions yet to be filled with only four available applications from the Industrial Arts Department. Aside from its function of training teachers, Industrial Arts is a service department for Electrical, Mechanical, Mining, Logging Engineering, and Agriculture. In addition much equipment was made for the department.

The catalogue of 1914-1915 mentions the Industrial Arts Department and with Professor Brandon as Head. Vocational drawing is offered with ten credits of work available in it. In addition, there is carpentry, cabinet making, patternmaking, forging, plumbing, foundry, machine shop practice, electrical construction and operation, manual training woodwork, (joinery and carpentry for miners, farmers, bridge builders, etc.) woodturning, tool making and tempering, blacksmithing, hammered metal work, foundry practice, dairy mechanics, and shop drawing.

7. Oregon Agricultural College Biennial Report of the President of the College, 1914-16. p. 100.

Due to war conditions, on June 15, 1918, the College began intensive training of soldiers in vocational courses under contract with the United States Government. These large classes were taught in the shops. They created a difficult problem of caring for more than three times the normal number of students and at the same time making radical changes in curricula. This was attempted with rooms and equipment insufficient to satisfy normal demands.

At the close of the war and the dismissal of the soldiers, the department returned to normal conditions. It enjoyed a normal growth and increasing prestige. Dean G. A. Covell, in his 1920-1922⁸ report made this statement:

Our graduates from the Industrial Arts curriculum find ready employment in teaching manual training, mechanical drawing, mathematics, and kindred subjects in high schools. So far the demand for our men to fill high school positions has been greater than we could supply.

A section of the biennial report of 1926-1928, by Harry S. Rogers, Dean of the School of Engineering, contains the following information.

Grant Adelbert Covell, Dean of the School of Engineering, died November 20, 1927, after an extended illness.

8. Oregon Agricultural College Biennial Report of the President of the College, 1920-22. p. 60.

During the year 1925, Professor Henry Clay Brandon, Head of the Industrial Arts Department, became ill and in 1927, resigned his position. He passed away in October of that year.

Professor Brandon joined the staff of the College in October 1913, as Professor of Industrial Arts and Director of Engineering Shops.

Following the death of Dean Covell, Professor H. S. Rogers was appointed Dean of the School of Engineering. Upon the resignation of Dean Rogers in 1933, Professor R. H. Dearborn became Dean of the School, the position he holds at present.

In September, 1927, Professor George B. Cox, was appointed Head of the Industrial Arts Department to succeed Professor Brandon who resigned due to failing health. Under the guidance of Professor Cox, many major changes were made in the curricula of the department, as well as in its facilities. The department has maintained its enviable record and has increased the scope of its service to the College and the State.

In 1913, a major curriculum in Industrial Arts was established with a separate departmental organization. In a partial reorganization in 1928, a new phase of work, Industrial Administration was organized. Since that time, it has been the responsibility of the Industrial Arts de-

partment to administer the program for the industrial arts teacher education and to continue the engineering shop program.

As the department is now organized, it functions in three different capacities:

1. As the department of engineering shops providing the training and instruction in manufacturing processes necessary to the preparation of mechanical and electrical engineers.
2. As a major department preparing men for baccalaureate degrees in Industrial Shop Administration.
3. As a department offering courses required in the curriculum of students taking Industrial Arts Education.

In 1928, the department offered its first coordinated summer session program. In each succeeding year, very satisfactory reception of the departmental program has been noted in both undergraduate and graduate study.

In summarizing, the following may be of interest as of April, 1940:

| | |
|--|-----------|
| Graduates from Industrial Arts Education program (B.S. in Ind. Arts) | 180 |
| Graduates from Industrial Administration program (B.S. in Ind. Adm.) | <u>29</u> |
| Total Bachelor of Science degrees | 209 |
| Graduates with Master of Science degrees | <u>37</u> |
| Total | 246 |
| Full time staff members | 7 |
| Present enrollment--undergraduates | 115 |

| | |
|---|-----|
| Present enrollment--graduates | 7 |
| Enrollment--summer session 1939 | 161 |
| Students enrolled in School of Education with Industrial Arts major norm | 8 |

Below is a list of the Industrial Arts courses which appear in the College catalogue of 1939-1940.

| | |
|--|-------------------------------------|
| Blacksmithing | Mill Work--Machine Woodwork |
| Brass and Alloy Foundry | Ornamental Iron Work |
| Carpentry | Pattern Making |
| Fiber Furniture Weaving | Practical Electricity |
| Forging and Welding | Production Engineering |
| Foundry Practice | Production Machine Work |
| Furniture Construction | Reading and Conference |
| Furniture Design | Seminar |
| Heat Treating | Sheet-Metal Work |
| Machine & Tool Maintenance (Machine Shop) | Shop Planning and Organiza- tion |
| Machine & Tool Maintenance (Wood Shop) | Time-and-Motion Studies |
| Machine Drawing | Upholstering and Seat Weav- ing |
| Machine Shop Practice | Welding Practice |
| Metal Crafts | Wood and Metal Finishing |
| Methods in Woodworking | Wood Turning |

CHAPTER III

THE STUDY

Constant effort is necessary to enable every progressive organization to maintain the place it has won through diligent attention to the demands of a critical clientele. A department within a school faces problems similar to those of an industry; namely, it has a product to market and that product must meet certain specifications before it will be given consideration and must prove its worth in competition with similar products which are produced by other organizations. What is true of industry is likewise true of departments and schools.

When the Industrial Arts Department was organized in 1913, it was assigned several duties, one of which was to train teachers to direct this rather new educational activity in the high schools of the State. Oregon State College was one of the first institutions in the west to recognize that special training was necessary to prepare adequately its graduates for that type of teaching.

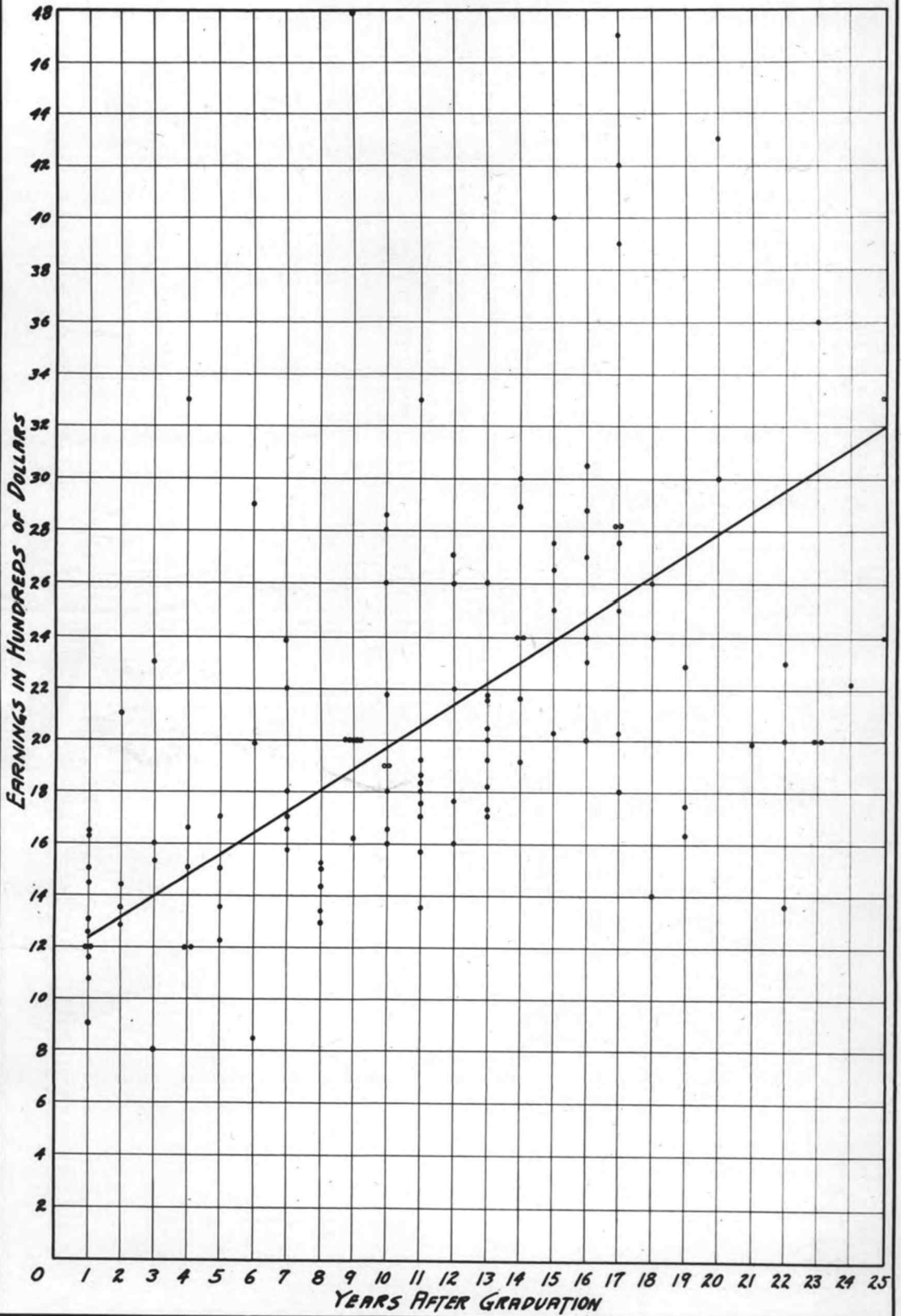
The training program of those days has been displaced in turn by others as the need for change became evident. A wider range of subjects has been the result, far superior equipment and methods have been adopted, and the efforts to improve the output have been increased.

It would be impossible for the administrator or director of the department to consult personally each of its graduates. It is evident that no group would be better able to supply the information needed to suggest improvements, courses, methods, and scope of the program.

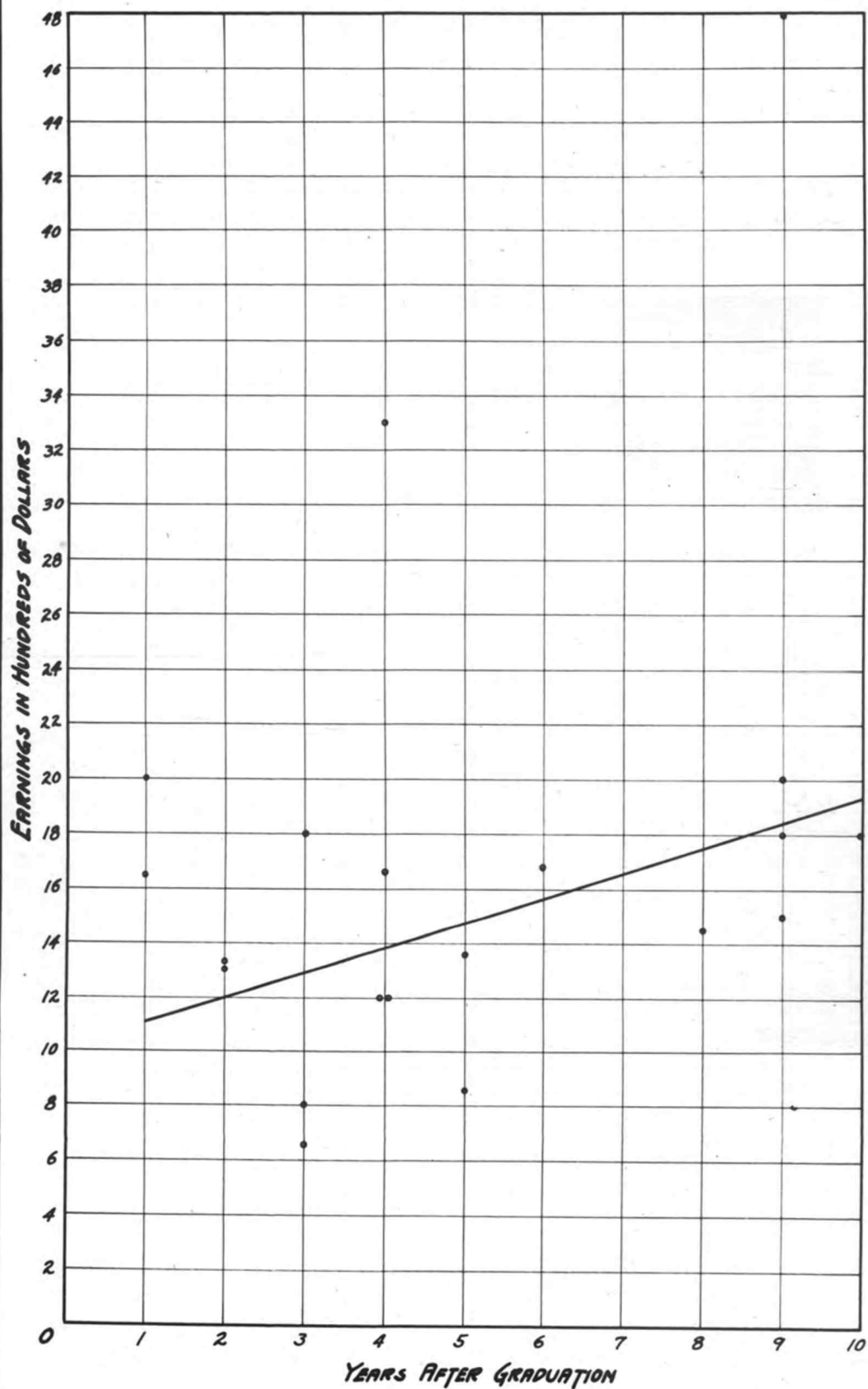
Graph number 1 records the salaries of all graduates from the department. The figures are based upon the returned questionnaires and it is believed they are essentially correct. The range of salaries of the teachers and school administrators is from approximately one thousand to four thousand seven hundred dollars for the school year. The range for graduates in industrial administration is from approximately six hundred to five thousand dollars.

Except for isolated cases the trend of salaries is gradually upward in relation to years after graduation. In many instances a statement was made that salaries were reduced during the years of depression and a further statement was often made that salaries have not been reestablished at the pre-depression levels. The earnings of graduates for such extra services as maintenance and repair of school buildings and equipment were not included in these data. A considerable number listed additional salary for driving school buses. Where these earnings were noted as separate incomes, they were not included in the salaries.

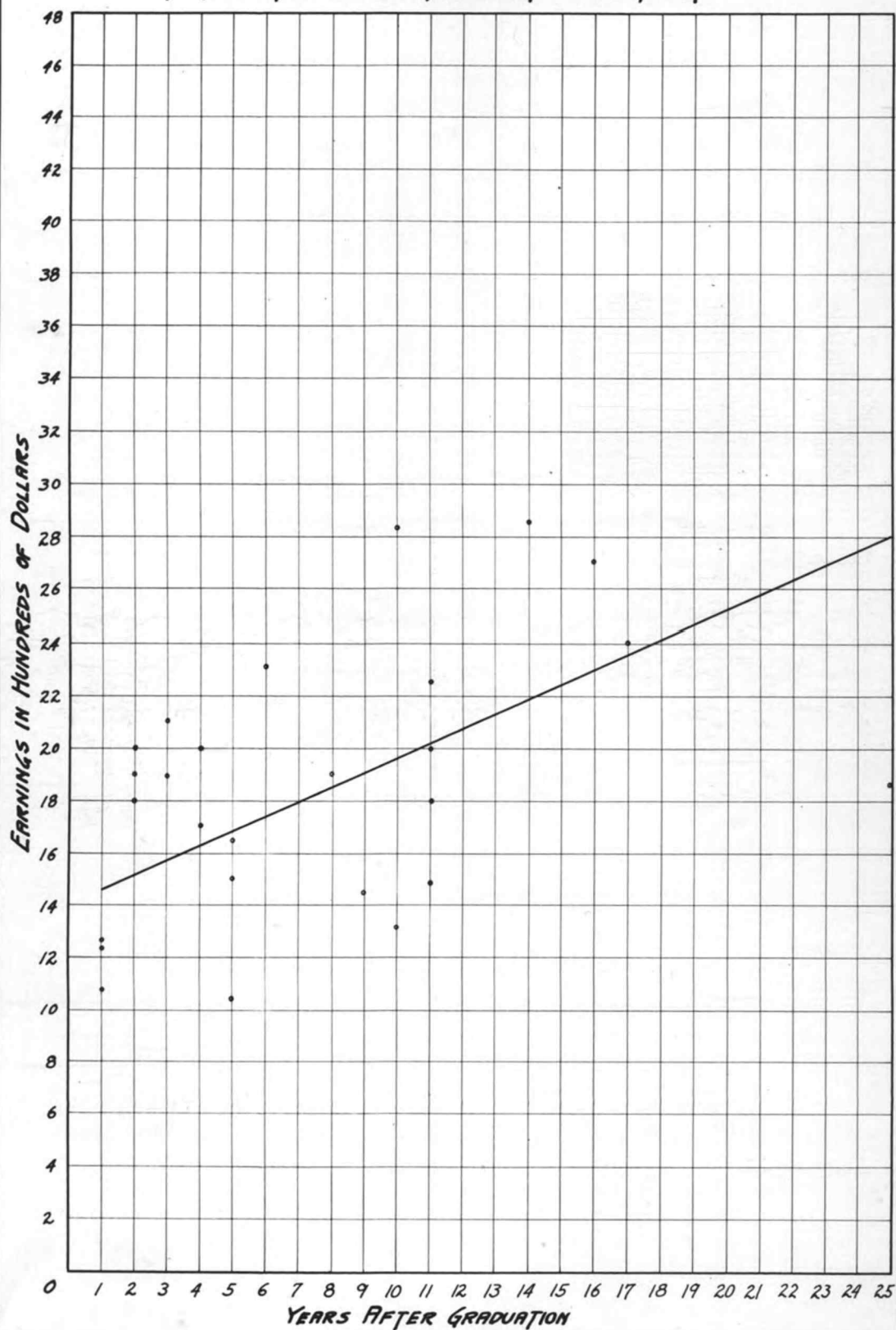
GRAPH 1
INDUSTRIAL ARTS GRADUATES
EDUCATION AND ADMINISTRATION



GRAPH 2
INDUSTRIAL ADMINISTRATION GRADUATES



GRAPH 3
INDUSTRIAL ARTS TEACHERS
NOT GRADUATES OF INDUSTRIAL ARTS DEPARTMENT



The curve drawn on the graph does not indicate a median or a mean salary; it merely shows a trend. There are too few cases to allow a rather definite statement or to plot a positive curve.

The Industrial Administration curriculum was established ten years ago and the graduates from it are so limited in number that graph number 2 represents a probable trend. It represents approximately 65 per cent of the entire number of graduates.

The salaries range from a low of six hundred twenty-five dollars to forty eight hundred dollars. The highest earnings are those of a graduate who owns one-half interest in a business established by him and his father; the lowest by one who is doing contract painting.

Graph number 3 shows the yearly income received by a rather mixed group for teaching. They were included in this study because they devote a large portion of their time to the teaching of industrial arts work. Graduates in this group are from the School of Education, and various departments of the School of Engineering, except Industrial Arts. The majority from the School of Education majored in industrial arts, while most of the group from the School of Engineering are graduates from the department of Mechanical Engineering.

The range in this group is from a low of one thousand

twenty-five dollars, to two thousand eight hundred fifty dollars. There are no significant disclosures made by this graph. It depicts a gradual rise in the salary scale as experience is gained. There are no extremely low or high salaries.

The salaries of graduates and their location are topics of great interest among their classmates and friends. The discussion of these topics invariably leads to a comparison of the salaries paid in the various states and the number of graduates employed in each. The information below is taken from the questionnaires.

Location by States of Industrial Arts Education Graduates

| | <u>Graduates</u> | <u>Per cent</u> |
|------------|------------------|-----------------|
| Oregon | 53 | 45 |
| California | 45 | 38 |
| Washington | 15 | 12 |
| Arizona | 2 | 1 |
| Others | <u>2</u> | <u>4</u> |
| | 117 | 100 |

Present Occupations of Industrial Arts Education Graduates

| | <u>Graduates</u> | <u>Per cent</u> |
|--|------------------|-----------------|
| Teaching | 82 | 70 |
| Executive and Administrative | 12 | 10 |
| Combination of Teaching and Administrative Duties | 12 | 10.5 |
| Not Teaching | <u>11</u> | <u>9.5</u> |
| | 117 | 100 |

The above includes some very significant data. It shows that 90 per cent of those graduated from Industrial

Arts Education curriculum who responded to the questionnaire are at present employed as teachers or in school administrative work.

Location by States of Industrial Administration Graduates

| | <u>Graduates</u> | <u>Per cent</u> |
|------------|------------------|-----------------|
| Oregon | 17 | 77 |
| California | 2 | 9.3 |
| Washington | 2 | 9.2 |
| Arizona | <u>1</u> | <u>4.5</u> |
| | 22 | 100 |

Present Occupations of Industrial Administration Graduates

| | <u>Graduates</u> |
|-----------------------------------|------------------|
| Owner or Proprietor | 3 |
| Administrative - Executive . . . | 5 |
| Sales | 1 |
| Operation and Maintenance | 6 |
| Contracting | 1 |
| Clerical | 3 |
| Inspection | 1 |
| Drafting | 2 |
| Student | 1 |

The importance of some traditional industrial arts subjects is sometimes challenged when newer studies become popular. As a means of determining the importance of various subjects, the third section of the questionnaire was devised for the purpose of rating them.

Table I lists 26 subjects. The names are somewhat general but readily understood by teachers in the field. The figures in the columns indicate the number of teachers who taught the work and the importance of each in the

teachers' daily schedule is indicated by placing the numbers in the respective columns.

Table I

The types of Work Comprising the Teaching Duties
of Industrial Arts Graduates

| | Order of Importance | | | | | Totals |
|--------------------------------------|---------------------|-----|-----|-----|-----|--------|
| | 1st | 2nd | 3rd | 4th | 5th | |
| Woodworking | 76 | 3 | 1 | | | 80 |
| Drawing | 24 | 37 | 7 | 7 | | 75 |
| Auto Mechanics | 3 | 2 | 3 | | | 8 |
| Electrical Work | 2 | 1 | 3 | | 2 | 8 |
| Finishing and Decorating | 1 | 6 | 13 | 5 | 4 | 29 |
| Sheet Metal | 2 | 5 | 7 | | 1 | 15 |
| Printing | 1 | 1 | | | | 2 |
| Coaching and Phys- ical Education | 9 | 4 | 2 | | | 15 |
| Leathercraft | | 2 | 1 | 2 | 3 | 8 |
| Mathematics | 6 | 2 | 2 | 1 | | 11 |
| Machine Shop Prac- tice | 4 | 1 | 2 | 1 | | 8 |
| General Metal | 7 | 1 | 4 | | | 12 |
| General Shop | 1 | | 1 | 1 | | 3 |
| Forging and Welding | 3 | 4 | 2 | | 1 | 10 |
| Metal Craft and Spinning | 1 | 1 | 1 | 2 | | 5 |
| Radio | 1 | | | | | 1 |
| Smith-Hughes Farm Mechanics | 1 | 1 | 1 | | | 3 |
| Foundry | 1 | 1 | 1 | 1 | | 4 |
| Stage Craft | 1 | 3 | | | | 4 |
| History | | 1 | | | | 1 |
| Social Studies | | | 1 | | | 1 |
| Boys Crafts | | | 1 | | | 1 |
| Aeronautics | | 1 | | | | 1 |
| Sign Writing | | | 1 | | | 1 |
| Sciences | | 1 | 1 | | | 2 |
| Music | | 1 | | 1 | | 2 |

The Table reads: woodworking was rated of first importance by 76 teachers, second by 3, and of third importance by 1.

In addition to subjects rated in Table I, the following were listed but their importance was not indicated.

| | |
|--------------------------------------|---------------------------------|
| Architectural Drafting and Design | History |
| Art | Orientation |
| Concrete and Cement | School Clubs |
| Dramatics | Trade & Industrial Education |
| General Science | Visual Education |

These data show that woodwork and drawing still retain the positions of leadership among industrial arts subjects. They have been the leaders since the introduction of industrial arts into the school program. The reasons are quite evident. The average home usually provides a few woodworking tools for the novice to use. Wood is generally available at low cost and the necessary articles and jobs involving tools and wood are very numerous. Whether in schools or at home, common basic manipulative processes are associated with wood and woodworking.

Drawing may be termed the mechanic's universal language; it does not require the knowledge of words to express ideas and information.

All industrial arts subjects are not growing in favor among teachers or students. Auto mechanics as a general industrial arts laboratory course, does not hold a high rank. This may be traced to the increased number of highly specialized units that comprise the modern motor car. Its service, maintenance, and repair are now highly

technical operations and have probably forever passed out of the range of students of high school age.

During recent years some shop subjects have taken on new importance by merging with others and are not of greater value to the student. Art metal and metal spinning are rapidly assuming the place formerly held by sheet metal work, although they have not been widely adopted at this time. The fundamental sheet metal processes are still taught, but added to the group are the more highly skilled operations of the workers in precious or semi-precious metals in addition to a greatly increased emphasis on the principles of art and design.

Since radios are common in most American homes, the interest of boys in electrical equipment has increased. There is reason to believe that more opportunity for boys to work with electrical equipment must be provided in an age when electrical appliances play such an important part in the economic scheme of the American home.

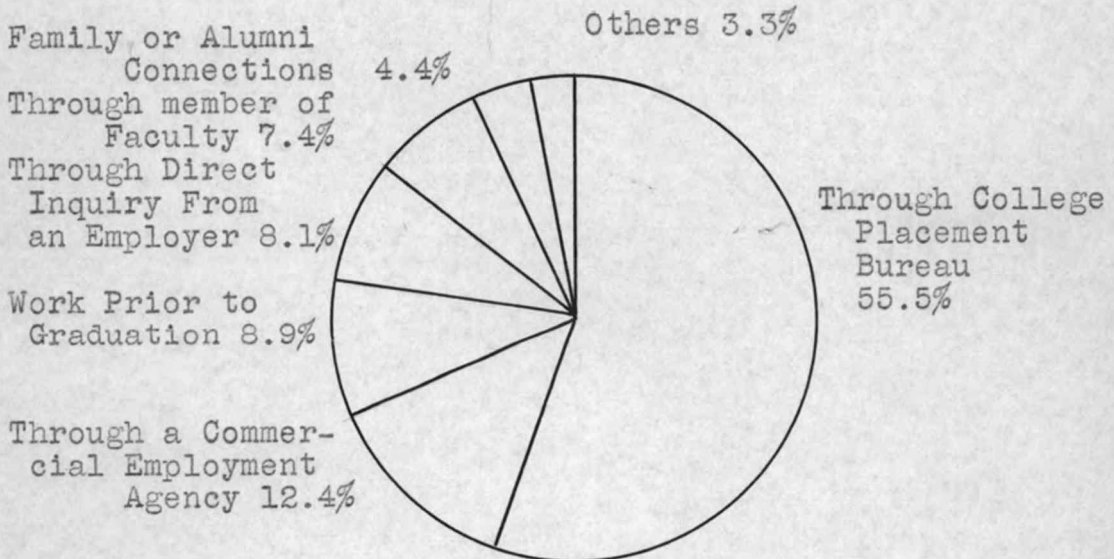
Additional evidence appears in Table I to impress upon those who direct industrial arts work, that its scope and form are continually changing and demand the inclusion of new units when they give promise of worthwhile contributions.

Data for Graphs 4 and 5 were obtained from replies to section 4 of the questionnaire.

The graphs show the percentage of graduates whose first employment after graduation was obtained through one of the eight sources listed. Separate graphs were made and percentages computed for the Industrial Arts Education and the Industrial Administration groups. The graphs are based upon 139 returns: Industrial Arts Education 122, Industrial Administration 17.

Graph 4

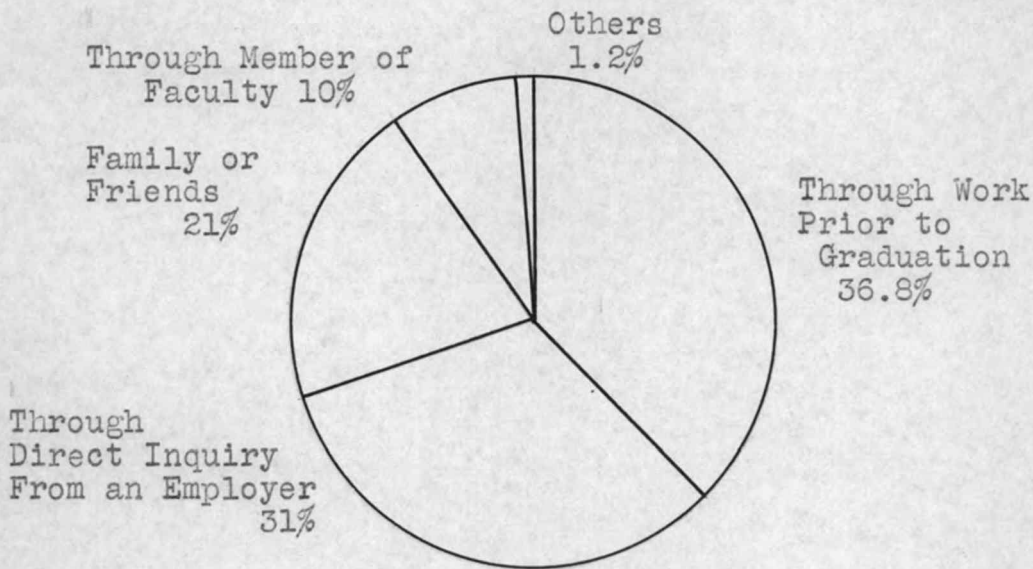
Means Through Which Industrial Arts Education
Graduates Obtain First Positions



The success of the College Placement Bureau in obtaining the first position for Industrial Arts Education graduates is clearly shown. The importance of the various means are in some respect surprising. At first glance it may appear that the graduates display no initiative in procuring employment, inasmuch as only 12 per cent of them found employment for themselves. The reason for this may be that employers of teachers inquire of well-established sources where the credentials of prospective teachers are on file. In many cases a personal interview is possible at the College while the student is studying here; later that opportunity may not exist. The graph seems to indicate that school authorities do not advertise for inexperienced teachers nor do our inexperienced teachers rely upon commercial agencies as frequently as upon the College Bureau.

Graph 5

Means Through Which Industrial Administration
Graduates Obtain First Positions



In the Industrial Administration group, Graph 5 the opposite conditions prevail, as would seem logical. The College Placement Bureau has little or no contact with industry nor does industry send its representatives to the Bureau to interview candidates for positions.

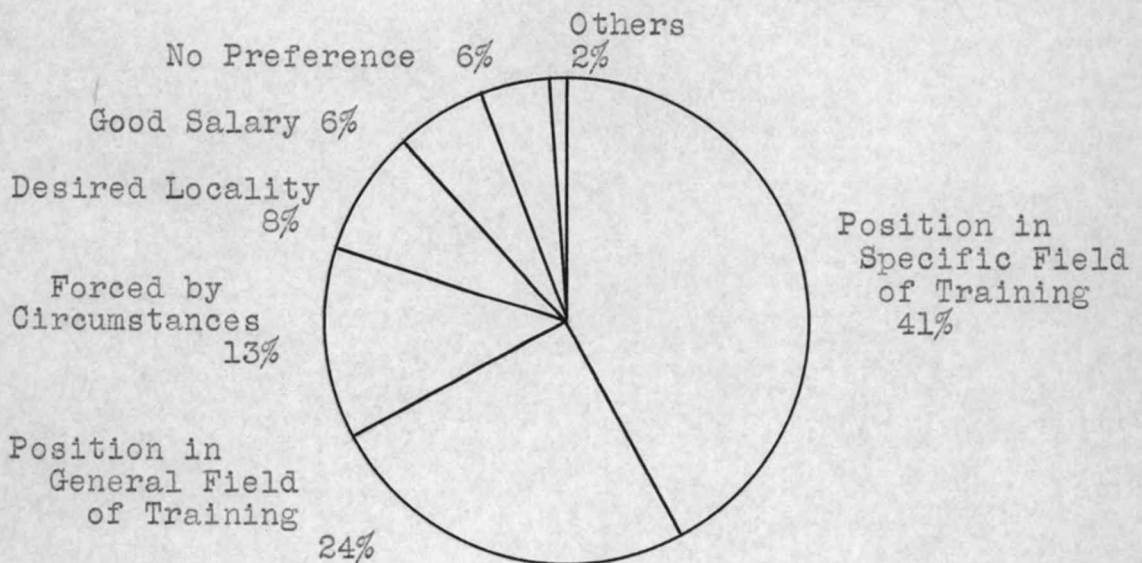
At present, either the graduate or the prospective employer takes the initiative and subsequent employment results entirely from their efforts. The data show that

to date no graduate of the Industrial Administration curriculum has obtained employment through the College Placement Bureau.

Graph 6 records the data received in answer to section 5 of the questionnaire. The section was divided into six parts. The answers have been classified as shown below. The graph includes data on both Industrial Arts Education and the Industrial Administration groups.

Graph 6

Reasons for Choice of First Position



The chief interest in Graph 6 centers around the fact that circumstances allowed such a large percentage of the group to obtain employment in either the general or specific field of their training. The offer of a good salary was not the greatest inducement, though it is probable that a satisfactory salary was offered in their general or specific fields. Another probability is that any position in the chosen field was acceptable due to the fact that the employee was aware that he lacked experience and that it would be wise for him to select employment that offered him an opportunity to test the efficacy of his training and to prove his ability.

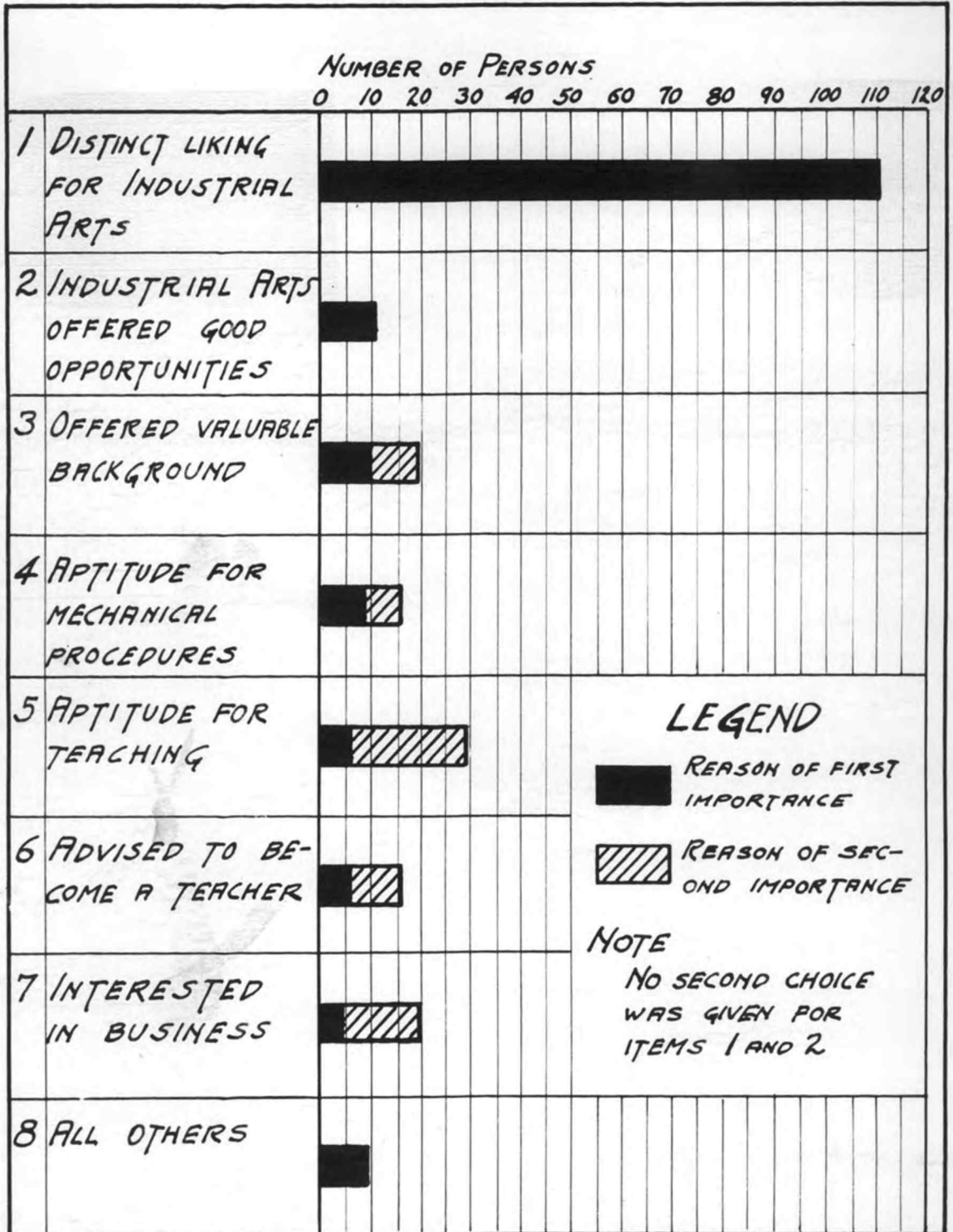
In several known instances a graduate was fortunate enough to find employment that combined several of the most favored conditions.

Section 6 revealed the reasons why college students enrolled in the Industrial Arts Department.

Graph 7 shows that students in the Industrial Arts Department had one outstanding reason for following its program through their college career; namely, a distinct liking for that type of work. The total of all other reasons, first, second, and third choice included, would not equal the number who devoted four years of college effort to it, because of interest in the work.

GRAPH 7

REASONS FOR FOLLOWING INDUSTRIAL ARTS PROGRAM BEFORE GRADUATION



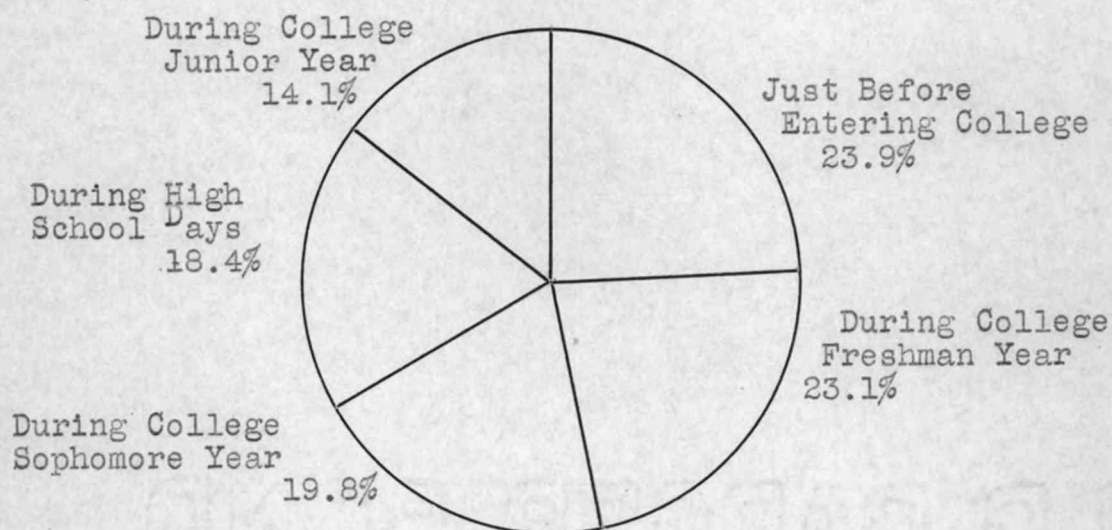
The data recorded on the graph requires little comment. More than 60 per cent of the returns state that the reason for the selection was a distinct liking for the work. Some wished to include more than one reason for their selection of the program and indicated two or more. The returns from the Industrial Administration group showed a definite trend towards the fields of business management, manufacturing, and contracting. The graduates from that curriculum are not numerous and most of them checked the first item in the sixth section.

Graph 8 shows at what periods the graduates from the Industrial Arts Department chose this type of work as a vocation.

The percentages shown in this graph are based upon 123 returns. Six returns did not answer in a manner that made the reply usable. In addition to the replies indicated above, additional data were taken from 29 returns from graduates of the School of Education, who teach industrial arts work or have left it to assume administrative duties. The latter group is included as a basis for comparison and to present certain important facts.

Graph 8

Showing When Industrial Arts Graduates Chose
Industrial Arts or Industrial Administration
as a Vocation



Several interpretations may be given to the returns from section 7. The reasons for both early and late entrance into the Industrial Arts Department, are quite numerous and varied. One outstanding fact is brought to light; namely, the choice of Industrial Arts Education or Industrial Administration is usually made not later than the students' junior year.

Based upon rather wide experience in advising students, the writer believes that the selection of in-

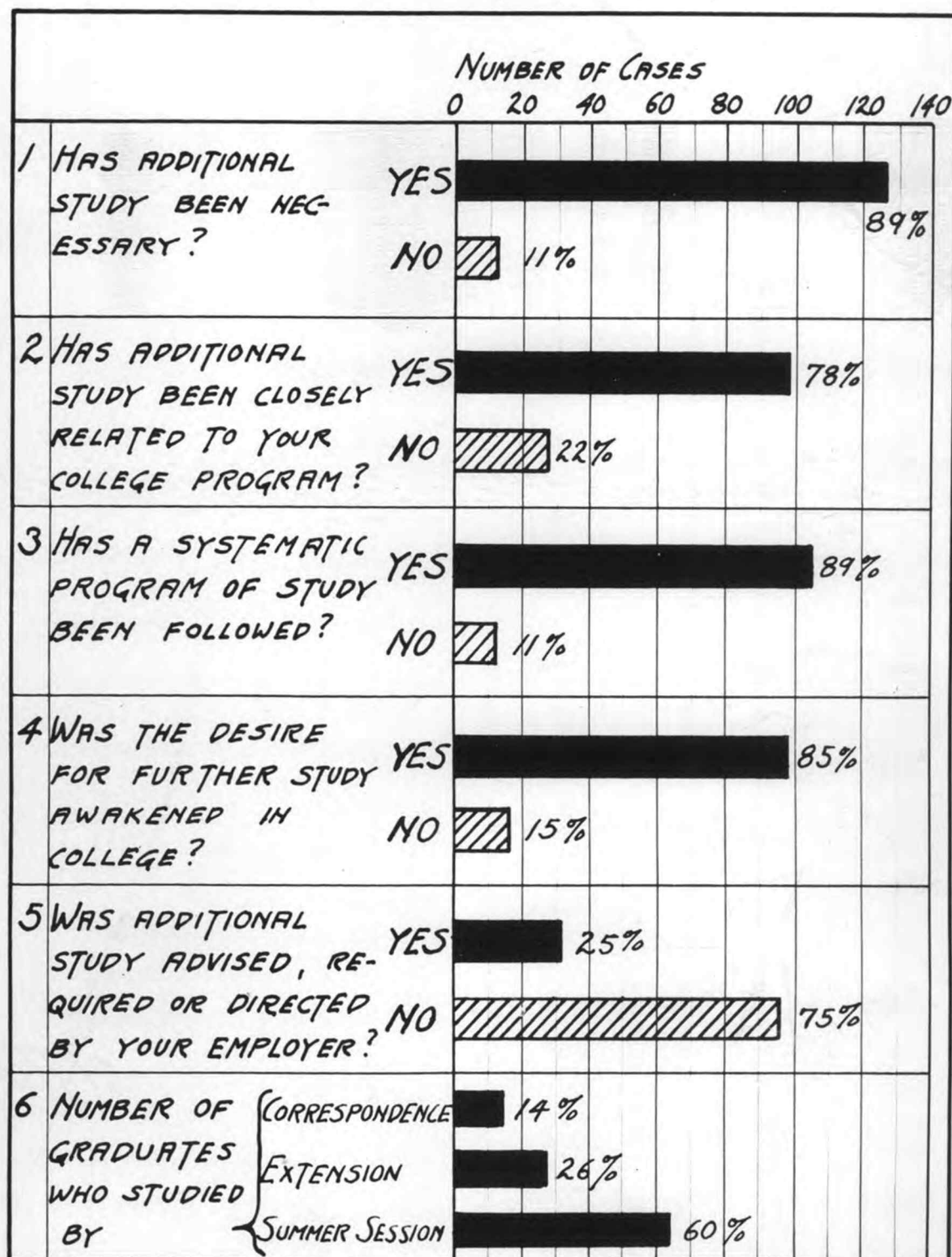
dustrial arts by more than 40 per cent of the industrial arts group prior to college entrance is to be expected. Those whose interest centered in the manipulative skills prior to college entrance and who did not desire to study the more abstract problems of the engineer anticipated greater satisfaction in the industrial arts field.

Approximately 20 per cent of the returns indicated that the choice was made at the end of the freshman year or during the sophomore year. That tendency has been noted for a long time. It is due, in a large part, to students who transferred from engineering to industrial arts. By that time many who first enrolled in engineering have come to realize that engineering is not machine operation and that the profession differs widely from their earlier conception of it. Difficulties may have been encountered in mathematics, physics, and similar studies which are not given as much weight in the industrial arts curricula.

It is probable that most of the 14 per cent who chose industrial arts during their junior year transferred to Oregon State from other schools. A few of them transferred from the School of Education. Transfers from normal schools are quite numerous due to the need for four years of industrial arts training to meet certification requirements.

GRAPH 9

EDUCATIONAL EFFORTS OF INDUSTRIAL ARTS GRADUATES



Of the 123 industrial arts returns received, not one indicated that the choice had been made during the senior year. Returns from 29 graduates, a mixed group not from the Industrial Arts Department, include six who state the decision to teach industrial arts was made before they entered college, two during the freshman year, seven during the sophomore, seven during the junior year, and seven after graduation.

The following reasons were given for their choices after graduation. Two taught in the academic field in high schools until their interest in industrial arts prompted them to prepare to teach it. Three of the group were tradesmen who saw a brighter future in teaching than their trades offered them, two were graduated from mechanical engineering.

Attention is called to Graph 8 which shows that more than 65 per cent of the industrial arts graduates had made the decision to follow that program before their sophomore year in college.

Graph 9 shows the efforts of industrial arts graduates to improve their education and to meet the increasing demands put upon them by their work.

This section brought much interesting information. Approximately 90 per cent were in positions that required them to continue to study, of which 78 per cent studied

work closely related to their college programs. A systematic study program was being followed by 89 per cent, while 84 per cent were studying because the desire for specific training was awakened during college days. These percentages seem too high, but in some respects compare favorably with results from other studies. They indicate a strong trend among industrial arts teachers to improve their educations.

Teachers are frequently compelled to continue their studies while in service to obtain salary increases and to meet certain specified requirements prescribed by school authorities. Returns show that approximately 25 per cent were required to do so, while 75 per cent were not.

Eighty-four of those who have continued their studies have attended summer sessions at this or other schools, a reasonable number when compared with the department's summer enrollment. Thirty-six individuals have continued study through the facilities of extension divisions and nineteen by correspondence. Thirty-one had used "other means" of study. Eleven had received practical or trade experience and twenty-four had sought betterment through professional reading.

Table II

Special Studies of Graduates

| | | |
|----------------------|------------------|--------------------|
| Accounting | Education | Leather craft |
| Apprentice Training | Industrial | Mathematics |
| Astronomy | Visual | Military Science |
| Aviation | Vocational | Music |
| Architecture | Guidance | Radio |
| Building Supervision | Industrial Arts | Research |
| Boat Building | Physical | Stage craft |
| Business | Extra curricular | Science |
| Criminology | activities | School Administra- |
| Dramatics | Glass making | tion |
| Economics | History | School Finance |

II

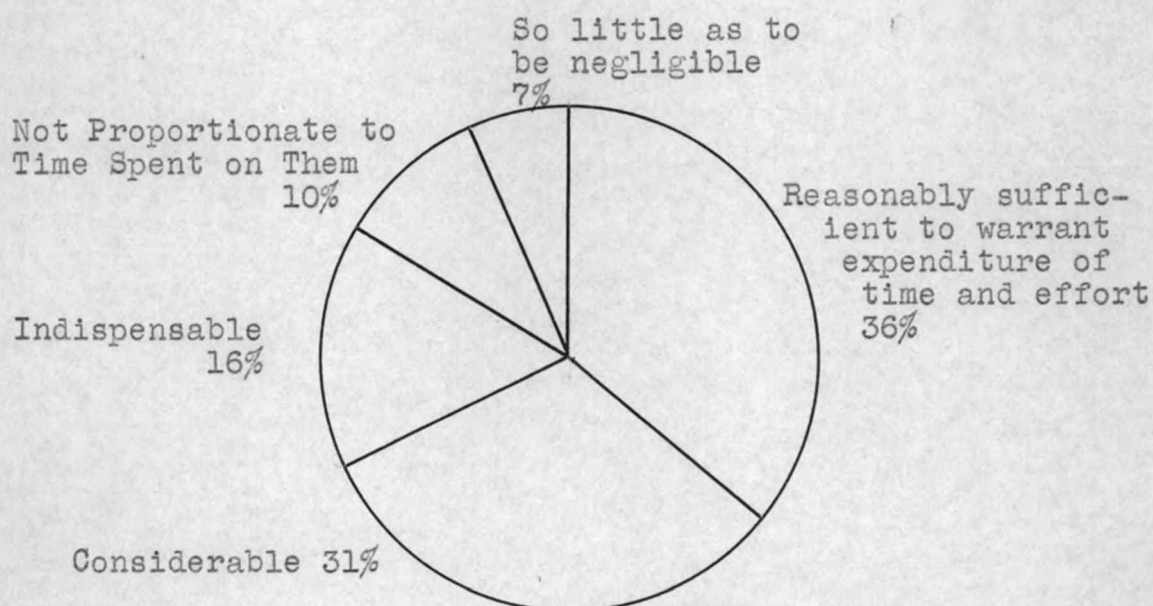
Table II lists the special studies of the graduates compiled from returns. Studies considered to be among the usual offerings of an industrial arts program are not included.

Graph 10 signifies the value placed upon the cultural studies by this group of college graduates.

Remarks are frequently made by students, particularly of undergraduate status, to the effect that the cultural studies should not hold the important place in the college program that they do. Interesting data are recorded which tend to refute the opinions of the younger students.

Graph 10

The Amount of Benefit Derived From Studies
Such as Social Studies, Languages, Literature



The percentage of graduates who were displeased with the results of their cultural studies equals approximately the percentage that placed the highest value on them. There still remains 67 per cent who evidently have no doubt of their value.

It is probably best to leave the selection of the social studies largely to the discretion of the school authorities with the practical assurance that the students eventually will endorse the policy when maturity and ex-

perience have added weight to their judgment.

Some answered that more art, economics, literature, and similar studies should be required. Under present conditions it is difficult to find time for the most necessary technical work, and it would be a questionable move to relinquish it in favor of work which has less direct bearing on the entire program. It must be remembered that those who in their mature years wish for more of the cultural and less of the technical study had ample opportunity to pursue those studies as electives in their college days and did not avail themselves of the opportunity. Additional administrative duties caused them to see a need for them, but would they include them if they were again of average college age and with little knowledge of what the future would demand of them?

The probable purpose of such studies in college is to round out the program and to find a probable source of interest which the student may later develop to a further degree. To conclude that their values are proportional to the time spent on them is indicated by the answers to the question.

Table III indicates the order of importance to industrial arts teachers of the professional, scientific, cultural, and technical groups of studies.

In addition to the returns from industrial arts

graduates the table includes the returns from approximately 20 teachers of industrial arts work who were graduated from other schools on the campus.

Table III

Order of Importance of the Professional, Scientific, Cultural, and Technical Groups of Studies

| | Order of Importance | | | | | | | |
|--------------|--------------------------------------|------|-----------|------|----------|------|----------|------|
| | 1st | | 2nd | | 3rd | | 4th | |
| | Number of individuals and percentage | | | | | | | |
| Professional | 33 | 20.5 | 68 | 45.9 | 31 | 21.9 | 11 | 8.1 |
| Scientific | 7 | 4.3 | 43 | 29.1 | 82 | 57.6 | 20 | 14.8 |
| Cultural | 2 | 1.2 | 16 | 10.8 | 22 | 15.5 | 103 | 76.4 |
| Technical | <u>119</u> | 74.0 | <u>21</u> | 14.2 | <u>7</u> | 4.9 | <u>1</u> | .7 |
| | 161 | | 148 | | 142 | | 135 | |

Teachers of technical work normally would rate technical work of most importance because it constitutes the major part of their duties.

About 20 per cent of the teachers rated their professional studies second only to their technical training while the scientific and cultural groups were rated very low. The path of promotion in school and industry leads from teaching and menial tasks to administrative positions if the employee possesses the necessary training and qualifications. The goal can be more certainly reached by professional training after mastery of the technical requirements.

The scientific group was rated third. It includes

physics, mathematics, chemistry, and the like. Industrial arts teaching in grade or high schools does not necessitate a broad knowledge of that field though the inclusion of such training is considered by the writer to be of great value to an industrial arts teacher. It is the policy of the Industrial Arts Department to recommend more study in this group. Many of the students registered in industrial arts have transferred from engineering curricula because of difficulty with mathematical computations. It is to be expected that they would not give the scientific group a high rating.

The cultural group, languages, social studies, and the like hold the last place. The rating is hardly fair due to the common dislike that men seem to have for languages, composition, and social studies. It may be seriously questioned whether prospective teachers should be allowed to evade such training. Though the rating places the cultural group last, the same people rate the social studies as worthwhile in another section of the questionnaire.

The answers to the twelfth question should prove of great value to this study, and also to the teaching staff of the department. There was a great variety of replies. Some of the information could be classified as general, while many of the returns listed specific studies which,

in the light of practical experience the graduates found were not supplied by their college programs. With this information as a basis, certain recommendations can be made for changes or additions to the industrial arts curriculum.

The criticisms must not all be accepted as representative of true conditions. Many shortcomings pointed out by graduates from the department during the first half of its existence are no longer in evidence and testimony to that effect was frequently encountered. After a study of the curriculum charts, which were enclosed with the questionnaire, much favorable reaction by the earlier graduates was noted. This group naturally included many who, by promotion, had risen to positions of administrative and supervisory responsibility.

The omissions were often indicated in another manner. Frequently work of a kind had been given, but due to the great number of courses each student must study, the allowable time for each must of necessity be too short. The complaint was made that a student did not have time to master a technic or subject in a term and due to the press of other courses no follow-up work was possible. That limitation is not traceable to the department, the work is available if the student wishes to postpone graduation until such time as he has completed the work he desires.

Many of the needs that are now apparent to the mature graduate appeared as barriers to him during college years, his perspective and his needs have changed, while young students, in general, probably have not.

There are assuredly some changes and additions necessary. Some of these have been known for a long time, but financial difficulties, made evident by lack of space, staff, materials, and equipment, have prevented their inclusion in the curriculum. Foremost in this group is printing. In several other schools which are training teachers of industrial arts, where printing is included, it ranks high in student interest.

Printing is not a mere frill. Schools of today are featuring extra curricular activities in an ever increasing array. In many of these, printed materials are necessary and, if they must be purchased from commercial or private establishments, their cost will often be prohibitive. It is not the purpose of this study to justify the teaching of printing as part of the high school's legitimate field. We must recognize that it is accepted and holds a favored place in secondary education; therefore, it becomes the duty of teacher-training institutions to prepare teachers to assume direction and supervision of it. As the average high school is at present constituted, a skilled journeyman printer could not be employed on the

basis of full time service or salary. It seems, therefore, that the teacher of printing will probably be one of the teaching staff whose duties will be so divided that he will share that work with other duties. To whom could the administrative head of the school look for help in this situation? Unquestionably it would be toward the staff member or members who are, by training and interest, capable in the practical arts.

As a leader among the schools of the nation which train teachers in the practical arts, it becomes increasingly evident that Oregon State College must broaden its program to include printing, in its various accepted forms, and so maintain its enviable position. It is an assured fact that other schools will adopt that policy if Oregon State does not. This would cause a general weakening of the local program and a serious loss of prestige.

There is another but less serious situation noted in the answers to question twelve, one which has caused more comment and general expression of need. Many teachers of industrial arts have pointed out that a lack of training exists in the type of accounting which is of major importance to all shop teachers.

In almost every shop there are several different groups of students using materials and equipment during the school day. It has always been the duty of the teacher

in charge to keep the accounts, to see that the losses are not excessive, and to see that students pay for materials which they use in their projects.

Accounting as it is taught on the campus has been an elective for some of the students of the department, and a required study for others. The evidence furnished by the questionnaire indicates strongly that accounting as taught at present does not satisfy the requirements of the industrial arts groups. The staff of the department is probably not able at present to undertake the organization and teaching of the type of accounting which is needed, but it could unquestionably be of great help to a teacher of accounting if he were assigned the task of organizing the work on the basis of the needs for a group such as that in the Industrial Arts Department. The method and form of that work would follow closely the needs as expressed by shop teachers who have experienced difficulties in maintaining proper shop records. Items such as student accounts, cost of lumber, hardware, finishing materials, tools, repairs and replacement of machine parts, would need careful attention.

This form of accounting would of necessity have to be easily understood and all items quickly recorded, priced, or identified. Teachers may have five or six groups each day and a complicated system of accounting

would require too much time and would be unwieldy.

Some graduates expressed the need for more practice teaching which calls to mind a remark made earlier in this study to the effect that each student wishes to receive a well-rounded training, but insists that it include his choice of electives and sufficient time for campus activities beyond the regular program. More practice teaching is essential, but classes which can be entirely delegated to student teachers are limited in number and, out of fairness to high school students, it is doubtful if they should pass from the high school with no contact with other than student teachers. In answer to question twelve, more teachers expressed a need for additional supervised teaching than any other present need.

An oft expressed wish, especially of the teachers, was for more training in the social graces. Mentioned specifically were the following: more training in public speaking, parliamentary procedure, social studies, and in general, the experiences that would enable a young teacher to impress favorably the people of the community when he is called upon to take an active part in teachers' meetings and public affairs. It is possible for any student to increase his knowledge of these things if he wishes to do so, since they are included in the work taught at the College.

Training in the use of the typewriter has been available at the College for many years, but it has not been popular with industrial arts students. It is not recommended that it be made one of the required studies, but its benefits to students and teachers should be stressed. Typing would prove of more value and would attract more male students if they would not have to compete for grades with young women and if the work were taught in a manner more attractive to men. Few men will enroll in a class of that type when they are far outnumbered by nimble-fingered girls who will assuredly make faster progress. The first aim of the course should be to teach the method, speed, as such, is of little value to the shop teacher or administrator.

Practically all other studies that had been omitted from the College program of the graduates are now offered as required units or electives.

Answers to question thirteen range from praise to caustic criticism. There was no limit to the number of subjects which could be criticized. The question asked for "all that now appear to have been unessential or unnecessary." There were listed 27 different subjects or subject groups. As evidence that many students had no adverse criticism to make, the tabulation shows that 30 per cent replied that all subjects studied were of some

value. It is of considerable interest to note that many of the subjects classified as unessential were among the electives selected by the students under no urging from advisers or department head. Leading the list and far outnumbering any other subject or group of subjects were education courses. They were not noted as any particular course in education, but education courses in general. There were 33 such criticisms.

History ranked second in number of adverse criticisms. There were 19 of them. Mathematics and trade analysis were next in order with 7 each.

The remainder were well scattered with none receiving more than five marks against them. The older graduates named some subjects which were unessential and are not in the present program. All persons cannot be pleased by one program; one would discard what another deems of great value. The returns often reflect discredit upon the ability of students to plan their programs for many now regard their early choice of electives with disfavor.

This group of questions was formulated in an effort to determine how satisfied the graduates are in their present work. These data include the 29 returns from the group graduated from the School of Education. Of the 151 questionnaires returned, 133 or 88 per cent answered that their present job was satisfactory. Many added that it was sat-

isfactory only for the present. Eighteen or 11 per cent were dissatisfied.

The prospects for promotion were not as satisfactory as the positions were. One hundred forty-one returns were tabulated and 98 or 69 per cent were satisfied with prospects for promotion, while 43 or 30 per cent were not. This indicates a healthy condition, and is encouraging rather than discouraging. Promotion is usually the incentive for continued study, and, without that goal to strive for, the tendency may be to become too settled and cease to grow intellectually.

Four graduates or 3 per cent of 132 replied that they did not like teaching after having given it a practical trial. That low percentage is both gratifying and remarkable. It does not necessarily indicate that all who like teaching are well suited for it, but in all probability they will do a better job than if less happily employed. Another and opposite view may be taken that teaching is liked because of the freedom it gives and the favorable conditions of employment accompanying the position.

The percentage of those who are glad they made the choice of industrial arts education or industrial administration is very high. Ninety-six per cent or 142 of 147 returns indicated they were glad they had studied industrial arts, while 4 per cent or 5 individuals were not.

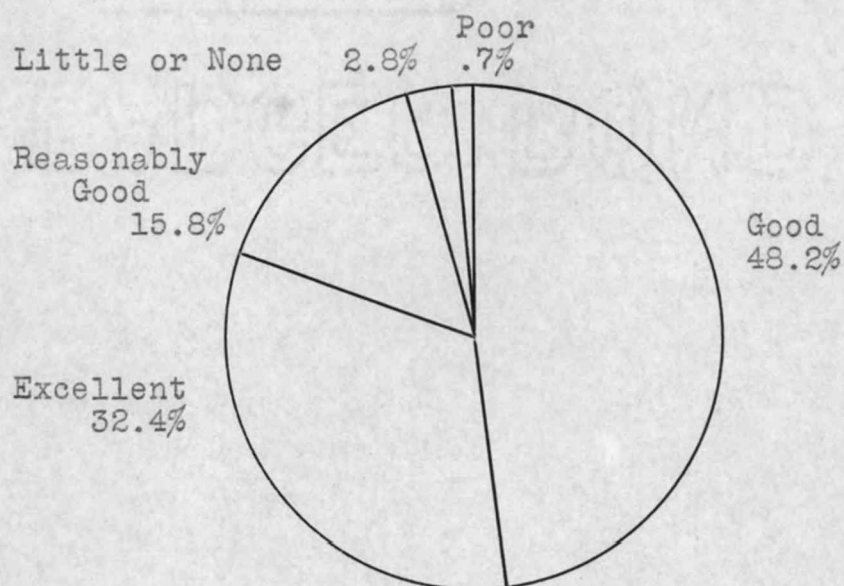
Of the 147 in the group, 17 were in industrial administration.

The Industrial Arts Department is keenly interested in the progress of its graduates and in their opinions of the training they received while enrolled at the College. Graduates who are now employed in professional, technical, or other pursuits should be able to supply the information which the section of the study requests.

Four questions were asked and the request made for an answer to one only. In no case was more than one reply made. The data recorded includes both groups, Industrial Arts Education and Industrial Administration.

Graph 11

Extent of Proper Professional and Technical Training
Obtained from College Program



This graph is based upon 139 returns. Four individuals answered that their college training gave them little or no foundation for their present duties. It must be borne in mind that all were requested to reply regardless of the nature of their present employment. Two of the four mentioned had entered fields not at all related to that of their training; one at present being in police work. It is obvious that their replies must be that their college study contributed little.

More than 75 per cent replied that the technical and professional preparation they received was either good or excellent and an additional 15 per cent that it was reasonably good. The replies from the present study seemed too favorable until a comparison was made with the results of the study by the Society for the Promotion of Engineering Education.

The replies to section 16 are shown in Table IV. Section 3 of the questionnaire showed that most of the teaching duties of the group centered around woodwork and drawing. When asked in section 16, to indicate the one subject which had been found to be of the most practical value, 44 answered that woodwork was and 34 gave drawing first place. These findings again indicate that under present circumstances we must continue to recognize woodwork and drawing as the two major groups.

Table IV

Subjects of Most Practical or Professional Value

| | <u>Opinions</u> | |
|-------------------------------|-----------------|---|
| Woodwork | 44 | |
| Drawing | 34 | One expressed an opinion for each of the following: |
| Industrial Arts | 19 | |
| Mental Work | 12 | |
| Machine & Tool Maintenance | 8 | |
| Shop courses | 8 | Art Metal |
| Auto Mechanics | 7 | Administration and Supervision |
| Fine Arts | 7 | Business Law |
| Psychology | 7 | Architectural Drawing |
| Science | 6 | Furniture Upholstering |
| Trade Analysis | 6 | Journalism |
| Vocational Education | 5 | Character Development |
| Education Courses | 5 | Military Science |
| Supervised Teaching | 5 | Physical Education |
| Public Speaking | 4 | Principles of Teaching |
| Shop Planning | 4 | Typing |
| Business Administration . . . | 4 | First Aid |
| Design | 3 | Welding |
| Accounting | 3 | |
| Labor Problems | 2 | |
| Personnel Management | 2 | |
| Business English | 2 | |
| English Composition | 2 | |
| Mathematics | 2 | |
| Physics | 2 | |

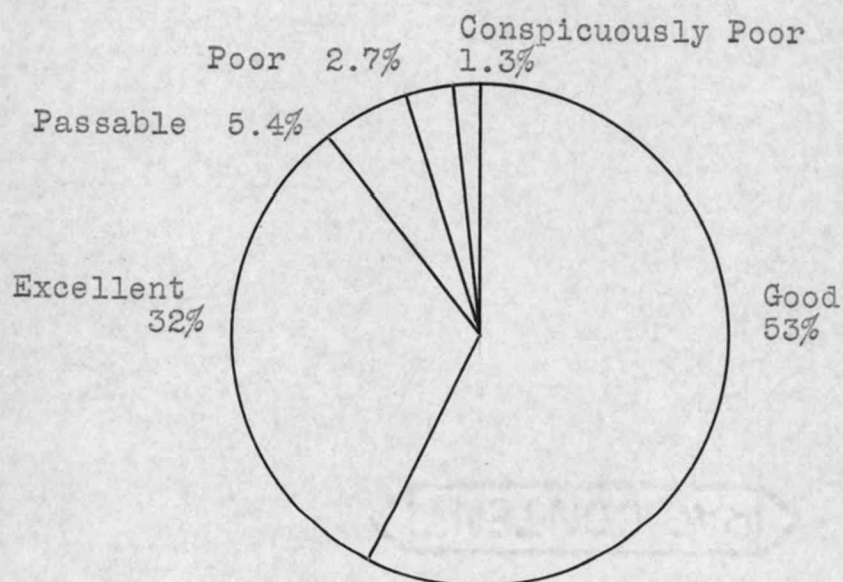
Note: Some misunderstanding was noted in section 16. The request was for the naming of the one subject of most particular or professional value. Some returns named shop courses, science, metal work, industrial arts, apparently not aware that they were naming groups of subjects.

It was the purpose of section 17 of the questionnaire to obtain the opinions of graduates concerning industrial arts subjects specifically, not general college work.

In another section, 15, information of a more general type is sought. The graph below on facts in 17, deals specifically with work taught by the staff of the department, therefore, it may be assumed to be largely of a technical nature, the work done in shops or laboratories.

Graph 12

Graduates' Judgment of the Quality and Sufficiency
of the Industrial Arts Program



Expressions from more than 125 graduates denoting their judgment of the quality and sufficiency of the work of a department may rightly be considered of great im-

portance. Graduates whose daily duties require that they use the facts and skills taught them during the period of their training should be best qualified to pass judgment. The data show that only 9 per cent of the returns give a rating of less than "good", while the sum of the replies listed as "good" or "excellent", comprises more than 90 per cent of the total. The replies were distributed rather evenly over the 25 year period of the study with no noticeable grouping of the replies of "excellent" or "good".

Table V shows the relative weight given the listed qualifications by men who employ or supervise college graduates.

Table V

Relative Weights Given Qualifications of Graduates

| | Order of Importance | | | | | | | | | | Total |
|---|---------------------|----|----|---|---|---|---|---|---|----|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Evidences or estimates of good character, personality | 22 | 13 | 3 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 47 |
| Evidences of initiative & qualities of leadership | 8 | 14 | 11 | 7 | 4 | 3 | 0 | 0 | 0 | 0 | 47 |
| Training in particular field or specialty | 13 | 4 | 8 | 5 | 3 | 5 | 1 | 1 | 3 | 2 | 45 |
| Willingness to assume responsibilities | 0 | 7 | 8 | 7 | 6 | 2 | 6 | 5 | 2 | 2 | 45 |
| Willingness to co-operate | 4 | 7 | 7 | 7 | 8 | 5 | 4 | 0 | 1 | 0 | 43 |
| Keeping up with new developments | 0 | 3 | 1 | 3 | 5 | 4 | 6 | 7 | 8 | 1 | 38 |
| Physical qualities, including appearance and neatness | 1 | 2 | 5 | 5 | 3 | 5 | 7 | 2 | 3 | 4 | 37 |
| Interest in daily tasks | 0 | 3 | 2 | 0 | 4 | 7 | 4 | 7 | 5 | 5 | 37 |
| Attention to detail | 0 | 1 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 37 |
| Scholastic record | 0 | 1 | 5 | 6 | 4 | 4 | 1 | 4 | 4 | 7 | 36 |
| Intellectual curiosity | 0 | 2 | 0 | 1 | 2 | 3 | 3 | 4 | 5 | 6 | 26 |

The answers to section 18 of the questionnaire were rather limited. Less than half of those who made returns indicated their opinions concerning that section. The questionnaire requested an answer from those who supervise or employ college graduates. All returns were recorded because no ready means exist by which the writer could distinguish between the graduates who have supervisory

duties and those who have not.

Table V indicates that "evidences of good character", and "pleasing personality", are the qualifications which are given major consideration. Not only are they often given first consideration but are frequently rated as second or third choices. Training in a particular field or specialty is of importance as a first choice. The three that hold first place are infrequently relegated to ratings of little importance. Among the list of qualifications submitted by the questionnaire, the leadership of the first three can hardly be disputed.

The scattering votes given the other qualifications creates a difficulty in classifying them. Six of them are not given first consideration in any of the returns, but the total weight given each indicates that in the opinions of the graduates they are of about equal importance. The probable value of the qualifications listed in the lower section of the table should not be overlooked because as supplementary characteristics, the returns give them a definite place.

Table VI below portrays the importance placed upon collegiate activities by this group of graduates. It indicates the amount they participated in them.

Included in these data are the returns from 139 graduates from the Industrial Arts Department, and the mixed group of 29 from other schools on the campus.

Table VI
Participation in Collegiate Activities

| | Rate of Importance | | | | Total |
|-----------------|-----------------------|-----|-----|-----|-------|
| | 1st | 2nd | 3rd | 4th | |
| | Number of Individuals | | | | |
| Athletics | 35 | 25 | 21 | 6 | 87 |
| Fraternity Life | 40 | 25 | 4 | 3 | 72 |
| Publications | 7 | 10 | 4 | 1 | 22 |
| Dramatics | 2 | 6 | 1 | 3 | 12 |
| Debate | 2 | 1 | 1 | 3 | 7 |
| Music | 18 | 11 | 3 | 2 | 34 |
| Journalism | 2 | 8 | 1 | 2 | 13 |
| School Clubs | 43 | 23 | 19 | 2 | 87 |

Others with scattering votes:

- Rifle team
- Student politics
- Boy Scouts
- Military
- Campus entertainments--Home-coming, etc.
- Lodges
- Religious groups

The results of this section show that industrial arts teachers participate extensively in many campus activities. Fraternity life and athletics hold an important place as might be expected, but the discovery that more students participated in the activities of school clubs is a sur-

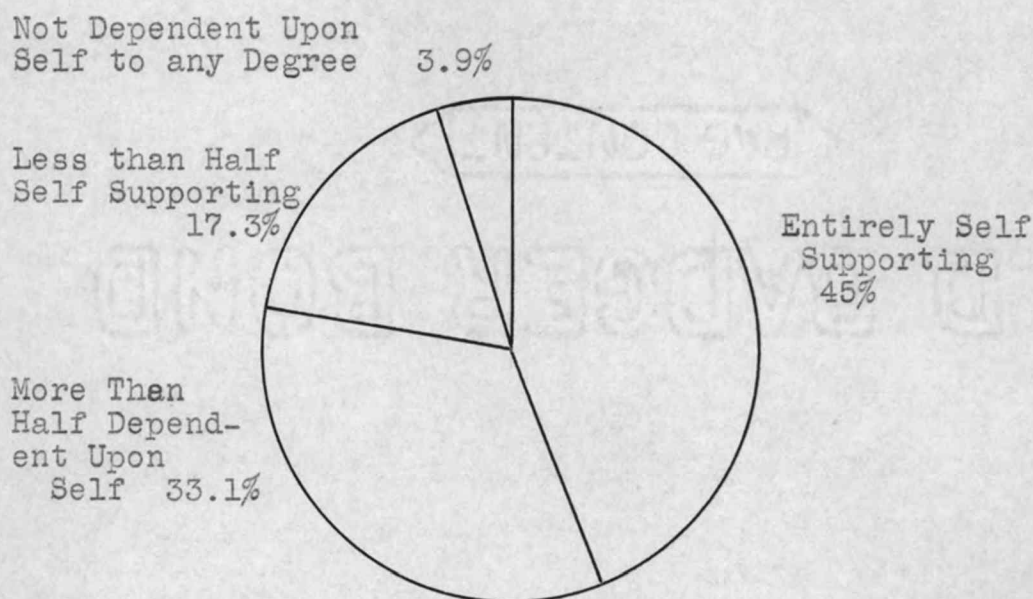
prise. Participants in school club activities are equal in number to those in athletics.

Many of the returns list three or four activities. It is interesting to note that music leads and exceeds in total number of participants the combined totals of publications, debate, dramatics, and journalism, and that the total for all five exceeds, by the narrow margin of one, the totals for athletics or school clubs. The inference is that the more learned activities are surpassed in popularity by the social activities.

Some facts concerning the financial status of graduates of the Industrial Arts Department are shown by Graph number 13.

Due to lack of adequate income and financial resources, the majority of industrial arts students are frequently in financial distress. The evidence of this is encountered particularly in laboratory courses where lack of funds often prevents the full enjoyment of the department's extensive facilities.

Graph 13

Source of Financial Support of
Industrial Arts Graduates

It is quite certain that few students in the Industrial Arts Department have all the expenses of schooling paid by parents or others. The data received support that opinion. Conversely, it hardly seems possible that 78 per cent or more of the students are half or totally dependent upon their own resources for college education. The percentage seems too great and may be due in some degree to the amount of time which has elapsed since their college days and the natural tendency to remember the un-

pleasant experiences of that time.

It is not known how many of the group have availed themselves of the aid extended by the Student Loan Fund. When money is obtainable from a source of that kind, with a minimum of interest and security, it offers the borrower an opportunity not accorded many young people in other walks of life. It is a question whether funds from that source should not be classified in the same category as money received from parents, guardians, or interested parties.

With the advent of the National Youth Administration, considerable help is being given to many students who otherwise might be forced to leave school. Regardless of the number being helped through this and other agencies, it is undoubtedly true that a large percentage, probably more than 50 per cent, of the Industrial Arts graduates had to rely upon their own resources and initiative for more than half of the money necessary to complete their college education.

Table VII shows the defects of their college program as expressed by the graduates at the time of this study. It is reasonable to believe that time and experience have somewhat altered the opinions since leaving college and the older graduates may not be able to clearly recall conditions as they were.

Table VII
Principal Defects of College Program

| | Order of Importance | | | | | Total |
|---|-----------------------|-----|-----|-----|-----|-------|
| | 1st | 2nd | 3rd | 4th | 5th | |
| | Number of Individuals | | | | | |
| Failure to show relationship of program | 28 | 7 | 3 | 3 | 2 | 43 |
| Poor methods of teaching | 9 | 3 | 3 | 0 | 1 | 16 |
| Poor quality of teachers | 3 | 4 | 1 | 3 | 2 | 13 |
| Too much work required | 1 | 1 | 0 | 0 | 0 | 2 |
| Too many courses given at one time | 4 | 1 | 1 | 3 | 0 | 9 |
| Too much shop work and drawing | 0 | 0 | 0 | 0 | 0 | 0 |
| Too much written work and theory | 9 | 6 | 2 | 3 | 0 | 20 |
| Too much study of languages, history, etc. | 12 | 8 | 2 | 0 | 1 | 23 |
| Too little attention given individual student | 27 | 12 | 14 | 3 | 2 | 58 |
| Too much weight given to examinations | 12 | 13 | 6 | 2 | 2 | 35 |

This section ranks as one of the most important in the study. Criticisms were requested and some were constructive and others were destructive.

Again, as in an earlier portion of the study, requests were made by older graduates for subjects that have become a part of the program since they left college.

A frequent complaint is that too much work is given to allow any time for the development of a pleasing personality. This criticism was added to the general list,

but few marked that part of the questionnaire. It is the recurrence of the old trouble, the students want everything taught to them, but it must all come within the regularly allotted time.

There are two groups of answers that need study and action. Forty-three individuals maintain that the faculty fails to show properly the relationship of the program to the graduate's future work. In most of the laboratory or shop subjects, it would seem that little effort on the part of the teacher should be necessary to show such relationship. In the cultural and scientific group, the complaint may be justified. It seems more likely that the average student does not make an effort to see the relationship, but depends upon someone else to solve this problem for him. The teacher may have a duty there, but the larger responsibility rests with the student.

Another criticism infers that the teacher does not give enough attention to the difficulties and problems of the individual student. From the teachers standpoint, the following question may be asked, "How can a teacher know that difficulties and problems exist unless the students apprise him of them?" Students frequently will not ask questions in class for fear of showing classmates that they have need for help. They will avoid asking help of a teacher either during class, or at other

times because they fear their grades will suffer. It is very doubtful that students cannot receive more than ample help and advice if they will present themselves in a frank manner and make their problems known to their teachers.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS

The purposes for which this study was undertaken may be stated briefly as follows:

1. To compile a brief history of the Industrial Arts Department.
2. To provide a list of names of all graduates of the Department.
3. To evaluate the returns from the questionnaire.
4. To make the recommendations which would benefit the students and the Department.

The work has, to a limited degree, been completed, the data recorded, and they are now available for reference and further study.

Most of the graduates of the Department are employed in the western states; a few are located in the middle western and eastern states; while others are employed in Alaska, Hawaii, Canada, and Chile. All of the graduates who were trained as teachers and who wish to engage in school work are so employed. The graduates who were trained to assume the responsibilities of junior executives in industry have been employed in industry.

The study was limited primarily to the undergraduate level.

The names of all graduates were obtained by an exten-

sive search of the records in the Office of the Registrar, the Alumni Office, and the College Placement Bureau. This study includes all who have been graduated from the Department since its organization in 1913, including all who were graduated prior to January 1, 1940.

To obtain the necessary data a questionnaire was formulated and sent to all living graduates who could be located. The questionnaire consisted of twenty-two sections. An effort was made to word it so that the recipient could do his part with a minimum of effort and expenditure of time. Enclosed with each questionnaire was a letter of transmittal stating the purposes of the study and requesting cooperation. A stamped addressed envelope was also enclosed to encourage prompt return of the questionnaires when they had been executed. Two curriculum charts were included to show the present programs of the Department, and to aid the older graduates to make a comparison with conditions as they formerly were.

Prior to January 1, 1940, there had been 209 graduates from the Department. Of this number 181 were graduated from the teacher-training program and 28 from the industrial administration program. Eight graduates have died. Questionnaires were sent to 195 graduates.

In addition to the industrial arts group, questionnaires were sent to 55 men who were graduated from other

schools and departments on the campus, and who are now teaching industrial arts work. Of this group, 42 were graduates from the School of Education with a major in industrial arts.

The total number of questionnaires which were distributed was 250. Graduates of the Industrial Arts Department returned 139 questionnaires or 71 per cent. Of the 55 questionnaires sent to the mixed group, 29 were returned or 52 per cent. A total of 168 returns were received, or 67 per cent of all that were sent.

This study should prove of value to the Industrial Arts Department in several respects. It has established contact with older graduates whose locations were previously unknown to the Department. Its interest in all of its graduates has been demonstrated. Their valuable cooperation, criticisms, and suggestions will furnish a basis for continued improvement of the Department's program.

A brief history of the Department presents some of the most important events since its establishment. The dates and facts enumerated have been obtained from the study of early catalogues and reports of the deans of the School of Engineering to the President of the College.

The Department was organized in 1913. Some of its personnel, equipment, and facilities had been previously

under the direction of the Department of Mechanical Engineering. G. A. Covell, Dean of the School of Engineering recognized early that graduates from the School were not necessarily suited, either by training or interest, to teach the manual arts in the public schools. An increasing demand for teachers to direct that work was evident. Dean Covell saw an opportunity for a considerable number of college graduates in that field of work, and he also recognized the importance of the proper contact between industrial arts teachers and high school boys, as a means of selecting and encouraging the more promising ones to enter the field of engineering. As early as 1908, he made preparations for the establishment of a teacher-training department to meet that need.

Professor H. C. Brandon was made head of the new department. He came to Oregon State College from the Portland Trade School and remained in charge of the Department until ill health caused him to retire in 1927. Professor George B. Cox was named his successor and assumed his new duties at the beginning of the fall term in 1927, and has held the position since.

The study has shown the necessity for continued improvement and revision of the curricula in order that they may fulfill their purposes and meet the requirements which are becoming more rigid. It has, in addition, produced

evidence that broader contacts with the graduates in their locations, under a great variety of conditions, can be a source of very valuable help to the Department. Practical experience has widened their viewpoint to such a degree that their knowledge of conditions in the secondary schools gives considerable weight to their opinions.

An important fact which was disclosed by the study is the success of the College Placement Bureau in obtaining positions for the graduates of the Department. The returns show that 55.5 per cent of the graduates who responded were placed in their first positions by the Bureau. The study further indicates that the graduates from the Industrial Administration program do not have a comparable agency working in their behalf.

Certain shortcomings of the Department's program were brought to light. A definite need was discovered for the following subjects: namely, a system of shop or laboratory accounting; printing; typing exclusively for men; a more efficient and instructive program in supervised teaching. Several additional needs were made known, but either the present program includes them or the requests for them were infrequent.

The necessity for providing training in printing became very evident in the study. Printing is now accepted as an important part of secondary education. The training

provided by the Industrial Arts Department cannot be considered complete without the addition of printing to the Industrial Arts Education curriculum.

It is interesting to note that 53 per cent of the Department's graduates teach in Oregon, and 45 per cent teach in California. The data reveal that the salaries in California are considerably more attractive than are those of Oregon. At present the California requirements for teachers are somewhat higher than they are in Oregon. It would seem that the added requirements are justified when the salary scale is considered.

A section of the study shows that 45 per cent of the industrial arts graduates were entirely self-supporting during their college careers, and an additional 33 per cent were more than half dependent upon their own resources to defray the expenses of their college education.

Several sections of the questionnaire were formulated in an effort to obtain data which would indicate whether or not the graduates were making satisfactory progress in their professions, had continued their professional studies, and were happy in their work. The percentage of favorable replies was very high. The graduates were asked whether or not they liked to teach and 97 per cent answered that they did.

One section of the study asked the graduates to rate

the professional and technical training they had received in college and 80 per cent of them rated it as good or excellent, while an additional 15 per cent replied that it was reasonably good.

After careful consideration was given to the data submitted the author of this study is of the opinion that they justify the recommendations that follow.

Recommendations

1. That closer contact be established and maintained between the students and teachers of the high schools, and the teaching staff of the Industrial Arts Department.
2. That a means be devised whereby some agency, preferably within the Industrial Arts Department, be given the responsibility of providing an employment service for the Industrial Administration graduates similar to the Bureau that functions in that capacity for the graduates who plan to enter the teaching field.
3. That the department establish as a policy that its teachers make direct contact with industry through the medium of actual employment in the fields of work in which they give instruction to students.
4. That the staff members, in their capacity as advisers, direct the students into classes where training may be had in the subjects where a deficiency now exists as shown by the results of this study.
5. That an effort be made to reduce the number of theoretical courses in education, to revise the necessary ones so that they deal with practical problems and do not merely discuss education.
6. That a state-wide supervisory authority be established to aid teachers of industrial arts work

so that the needs of both students and teachers may be served to better advantage.

7. That a plan be devised whereby some amount of graduate credit can be earned by graduates of the Department who are teaching and desire to increase their knowledge and skills in the laboratory studies.
8. That an increase in the standards of supervised teaching be made so that each new teacher may be more fully trained to meet the problems of his profession.

CHAPTER V

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CHAPTER VI

APPENDICES

Chronological and Alphabetical List
of Industrial Arts Graduates
1915 to 1940

1915

| | |
|-------------------------------|---------------------|
| Dolde, William Earl(deceased) | King, Luther Andrew |
| James, Oscar William | Motley, Jesse W. |

1916

| | |
|-------------------------------|-----------------------|
| Dolde, William Earl(deceased) | Turner, Arthur Edward |
| (regraduated)* | |
| Mason, Walter Harold | |

1917

| | |
|----------------------------|--------------------------|
| Allingham, William David** | McCormick, Harl Craig |
| Amort, Paul Francis** | Powers, Fred |
| Billie, Brewer Astor** | Sanders, Lewis Claude |
| Blakely, Lloyd Herbert** | (deceased) |
| (deceased) | Schoeffel, Raymond Louis |
| Gatchell, Charles Barnard | Straughn, James Alfred** |
| King, Charles(deceased) | |

1918

| | |
|---------------------------|----------------------|
| Ellestad, Melvin Hiram | North, David |
| Ericson, Lars John | Robey, Donald L. |
| Mack, Lawrence Wallace | Smith, Chester Hiram |
| Nordling, David Nathaniel | |

1919

| | |
|---------------------------|------------------|
| Mentzer, Leland Alexander | Parcher, Phillip |
|---------------------------|------------------|

1920

| | |
|--------------------------------|----------------------------|
| Bogges, John Willis | Nichols, Ambrose Reubin |
| Groshong, Frederick Monroe | Rearden, Blueford Barton |
| James, Oscar Wm.(regraduated)* | Turner, Harold (deceased) |
| Lukens, Glenn | Vestal, James F.(deceased) |

1921

| | |
|------------------|-------------------------|
| Fox, Otto Lee | Reynolds, Loren |
| Orr, John Judson | Van Nice, Thomas Kiefer |

*Regraduated because of the increase in standards.

**Degree granted at end of previous summer session.

1922

Beaufort, Paul Alfred
Buchanan, Fred Hartman

Dawe, Percy
Grubb, Wendell

1923

Bogie, Donald Leeman
Johnson, Harold Wm.
Keller, Robert Jonathan
Lance, Forrest Bryson
McGee, Leonard Lacy
Olson, Harold Raymond

Purvine, Laurence (deceased)
Robinson, Paul Evans
Sims, Lee Thomas
Soderstrom, Clarence R.**
Tolman, John Everett
Weiss, Zeno Francis

1924

Bedynek, John Pierpont
Chindgren, Ruben Franklin
Connet, Darwin Bardwell
Giddings, Paul
Hickok, Clarence Wm.
Kidder, Russell Bradford**

Pickard, Archie Niel
Reynolds, Trevis Fenton
Ruch, Laurence Edwin
Thomas, John Bert
Wolfe, Glenn Alfred
Zimmerdahle, Frank Wm.**

1925

Bump, Victor Leland
Daniels, Thaxter Norman
Ericksen, John Ragnar
Lane, James Sidney**
Parker, Ralph Walton
Saxe, Merle Kenneth

Schlegel, Joseph Theodore
Stannard, Frank McNee
Stokesbary, Maurice Ralph
Tunnel, John Wesley
Watts, Worth Phillips**
Willard, Jay Harold

1926

Coulson, Korle Faye
Cumming, Orville Alexander
Drews, Arnold Henry**
Erdman, LeRoy Laurence
Gibson, James Marion
Goff, Roby DeLoss
Koski, Jalmer Mathias

Marr, Uel Barton
Myers, George Edward**
Nelson, Harry George
Rathbone, Tom Griffis
Scherer, Walter Hirschell
Welch, Herbert Earl**

1927

Bedynek, Julius Ludwig
Eggleston, Cola Lewis**
Ehlen, Harry Herman
Eliassen, John Mathews
Hollenberg, Alvin Herbert
Jabusch, Fred Melvin

Jones, Casey Stacey**
Landes, Clarence Harvey
Miller, John Parker
Subject, Felix August
Teale, Harold Arthur

1928

Booth, Claud Lorraine
 Donnelly, Eugene Dorsey
 Fulp, Desmond Thomas
 Goodwin, Fred Martin

Jensen, Rueben Leander
 Savory, Jack
 Shriner, Lloyd Willis

1929

Beach, Charles Kenneth
 Cahill, Robert Carrol
 Conner, Tharold Calvin
 Dean, Walter Scott
 Ely, Glenn Harold
 Ewert, Fred Carl
 Greiner, Earl Jack**
 Lingelbach, George Henry

Martin, Glenn Lafayette
 Palmer, Arthur Edwin
 Romig, Maurice Miller
 Rounds, Wallace Thornton
 Say, Donald Martin
 Toy, Albert Henry
 Weidman, Joseph

1930

Aase, Carl
 Chute, Ernest Ellsworth
 Eliassen, Sven
 Finley, Durward Deverre
 Hahn, Bruce Jackson
 Lippert, Theodore Gerhart

Saling, Neil Edmund
 Schmitt, Gordon Walcott
 Shogren, Harold Wayne
 Shultis, Karel Burtis
 Weatherford, Marion Tasker
 Wilson, Richard Henry

1931

Bullard, Maurice Leslie
 Clisby, George Bert
 Dunn, Lloyd Thomas
 Forsnas, Roy Viking
 Garrison, Elmer Walter
 Johnson, Chester

McEachern, Alexander B.
 Pernu, Lauri O.
 Runciman, Eldon George
 Spaniol, Eugene Michael
 Steele, Clair Newcomb
 Wilson, Gayford Finley

1932

Carl, Raymond August
 Chapson, Kenneth Phillips
 Moore, Leonard Albert
 Newth, Carrol Ruble**

Perry, Walter LeRoy
 Stephenson, Lee
 Swall, Lillard Trask**
 Wilson, Alden Reed

1933

Allen, Ethan Alfred
 Haan, Clarence M.**

Lovegren, Laurence A.

1934

Bogges, Jack C.
 Fait, Edwin
 Landes, Alfred Valentine**

Lubersky, Albert Raymond
 Roner, Fred Arnold

1935

Battaglia, Frank Edward
 Benham, Henry Laurens
 Iverson, Herbert Kuno
 Kaufman, Walter Hill**
 McCormick, Paul

McGovern, Phillip C.
 Meeker, Cecil Hamilton
 Roner, Joseph George**
 Williamson, Russel W.

1936

Daue, Louis James
 Fuller, George Alvin

Heinrich, Fred John
 Meyers, John Charles

1937

De Bernardis, Amo
 Finlay, Keith Ferguson
 Ireland, Frederick Peter
 Mason, Donald Lyman
 Nicholas, Jack Louis

Olson, Theodore William
 Riddle, Warren Luther
 Schmitt, Roland Alfred
 Symmes, Daniel T.
 Thomas, Verne

1938

Clemens, Clifton Theodore
 Flood, Einar Johan
 Mayer, Lawrence Wm.
 Meier, Herbert John

Reitz, Emory Elbert
 Van Pelt, Franklin Henry
 Wake, Selmer Olin
 Wessela, Stillman Joseph

1939

Arnott, David Shireess
 Beaumont, Darrell Wm.
 Bentz, G. Gale
 Buxton, Robert
 Grubb, Wayne Charles
 Higgins, Donald Blaine
 Hill, Kenneth Parkinson
 Hutchens, R. Fred

Hutchins, John Ryal
 Jones, Wilbur Wm.
 Longueville, Robert
 Roberts, Verlin Clare
 Robley, Asa Austin
 Sandoz, Emile Henry
 Voss, Vern Wisner

Alphabetical List of Industrial Arts Graduates 1915 to 1940

Year of Graduation

| | |
|---|-------|
| Aase, Carl | 1930 |
| Allen, Ethan Alfred | 33 |
| Allingham, William David | 17 |
| Amort, Paul Francis | 17 |
| Arnott, David Shires | 39 |
| Battaglia, Frank Edward | 35 |
| Beach, Charles Kenneth | 29 |
| Beaufort, Paul Alfred | 22 |
| Beaumont, Darrell William | 39 |
| Bedynek, John Pierpont | 24 |
| Bedynek, Julius Ludwig | 27 |
| Benham, Henry Laurens | 35 |
| Bentz, George Gale | 39 |
| Billie, Brewer Astor | 17 |
| Blakely, Lloyd Herbert (deceased) | 17 |
| Bogie, Donald Leeman | 23 |
| Boggess, Jack C. | 34 |
| Boggess, John Willis | 20 |
| Booth, Claude Lorraine | 28 |
| Buchanan, Fred Hartman | 22 |
| Bullard, Maurice Leslie | 31 |
| Bump, Victor Leland | 25 |
| Buxton, Robert | 39 |
| Cahill, Robert Carrol | 29 |
| Carl, Raymond August | 32 |
| Chapson, Kenneth Phillips | 32 |
| Chindgren, Ruben Franklin | 24 |
| Chute, Ernest Ellsworth | 30 |
| Clemens, Clifton Theodore | 38 |
| Clisby, George Bert | 31 |
| Conner, Therold Calvin | 29 |
| Connet, Donald Bardwell | 24 |
| Coulson, Korle Faye | 26 |
| Cumming, Orville Alexander | 26 |
| Daniels, Thaxter Norman | 25 |
| Daue, Louis James | 36 |
| Dawe, Percy | 22 |
| Dean, Walter Scott | 29 |
| De Bernardis, Amo | 37 |
| Dolde, William Earl(deceased)Regraduated in | 15-16 |
| | 1916 |
| Donnelly, Dorsey Eugene | 28 |
| Drews, Arnold Henry | 26 |
| Dunn, Lloyd Thomas | 31 |

Alphabetical List (continued)

| | Year of Graduation |
|---|--------------------|
| Eggleston, Cola Lewis | 1927 |
| Ehlen, Harry Herman | 27 |
| Eliassen, John Mathesw | 27 |
| Eliassen, Sven | 30 |
| Ellested, Melvin Hiram | 18 |
| Ely, Glenn Harold | 29 |
| Erdman, Le Roy Laurence | 26 |
| Ericksen, John Ragnar | 25 |
| Ericson, Lars John | 18 |
| Ewert, Fred Carl | 29 |
| Fait, Edwin | 34 |
| Findlay, Keith Ferguson | 37 |
| Finley, Durward Deverre | 30 |
| Flood, Einar Johan | 38 |
| Forsnas, Roy Viking | 31 |
| Fox, Otto Lee | 21 |
| Fuller, George Alvin | 36 |
| Fulp, Desmond Thomas | 28 |
| Garrison, Elmer Walter | 31 |
| Gatchell, Charles Bernard | 17 |
| Gibson, James Marion | 26 |
| Giddings, Paul | 24 |
| Goff, Roby De Loss | 26 |
| Goodwin, Fred Martin | 28 |
| Greiner, Earl Jack | 29 |
| Groshong, Frederick Monroe | 20 |
| Grubb, Wayne Charles | 39 |
| Grubb, Wendell | 22 |
| Haan, Clarence M. | 33 |
| Hahn, Bruce Jackson | 30 |
| Heinrich, Fred John | 36 |
| Hickok, Clarence William | 24 |
| Higgins, Donald Blaine | 39 |
| Hill, Kenneth Parkinson | 39 |
| Hollenberg, Alvin Herbert | 27 |
| Hutchens, Ronald Fred | 39 |
| Hutchins, John Ryal | 39 |
| Ireland, Frederick Peter | 37 |
| Iverson, Herbert Kuno | 35 |
| Jabusch, Fred Melvin | 27 |
| James, Oscar William (regraduated in 1920). | 15-20 |
| Jensen, Ruben Leander | 28 |
| Johnson, Chester | 31 |
| Johnson, Harold William | 23 |
| Jones, Casey Stacey | 27 |
| Jones, Wilbur William | 39 |

Alphabetical List (continued)

| | Year of Graduation |
|--------------------------------------|--------------------|
| Kaufman, Walter Hill | 1935 |
| Keller, Robert Jonathan | 23 |
| Kidder, Russell Bradford | 24 |
| King, Charles (deceased) | 17 |
| King, Luther Andrew | 15 |
| Koski, Jalmer Mathias | 26 |
| Lance, Forrest Bryson | 23 |
| Landes, Alfred Valentine | 34 |
| Landes, Clarence Harvey | 27 |
| Lane, James Sidney | 25 |
| Lingelbach, George Henry | 29 |
| Lippert, Theodore Gerhart | 30 |
| Longueville, Robert | 39 |
| Lovegren, Laurence Alfred | 33 |
| Lubersky, Albert Raymond | 34 |
| Lukens, Glenn | 20 |
| Mack, Lawrence Wallace | 18 |
| Marr, Uel Barton | 26 |
| Martin, Glenn Lafayette | 29 |
| Mason, Donald Lyman | 37 |
| Mason, Walter Harold | 16 |
| Mayer, Laurence William | 38 |
| McCormick, Harl Craig | 17 |
| McCormick, Paul | 35 |
| McEachern, Alexander Bruce | 31 |
| McGee, Leonard Lacy | 23 |
| McGovern, Phillip Clifford | 35 |
| Meeker, Cecil Hamilton | 35 |
| Meier, Herbert John | 38 |
| Mentzer, Leland Alexander | 19 |
| Meyers, John Charles | 36 |
| Miller, John Parker | 27 |
| Moore, Leonard Albert | 32 |
| Motley, Jesse | 15 |
| Myers, George Edward | 26 |
| Nelson, Harry George | 26 |
| Newth, Carrol Ruble | 32 |
| Nicholas, Jack Louis | 37 |
| Nichols, Ambrose Reubin | 20 |
| Nordling, David Nathaniel | 18 |
| North, David | 18 |
| Olson, Harold Raymond | 23 |
| Olson, Theodore Wm. | 37 |
| Orr, John Judson | 21 |
| Palmer, Arthur Edwin | 29 |
| Parcher, Phillip | 19 |

Alphabetical List (continued)

Year of Graduation

| | |
|--|------|
| Parker, Ralph Walton | 1925 |
| Pernu, Laure O. | 31 |
| Perry, Walter Le Roy | 32 |
| Pickard, Archie Niel | 24 |
| Powers, Fred | 17 |
| Purvine, Laurence (deceased) | 23 |
| Rathbone, Tom Griffis | 26 |
| Rearden, Blueford Barton | 20 |
| Reitz, Emory Elbert | 38 |
| Reynolds, Loren (deceased) | 21 |
| Reynolds, Trevis Fenton | 24 |
| Riddle, Warren Luther | 37 |
| Roberts, Verlin Clare | 39 |
| Robey, Donald L. | 18 |
| Robinson, Paul Evans | 23 |
| Robley, Asa Austin | 39 |
| Romig, Maurice Miller | 29 |
| Roner, Fred Arnold | 34 |
| Roner, Joseph George | 35 |
| Rounds, Wallace Thornton | 29 |
| Ruch, Laurence Edwin | 24 |
| Runciman, Eldon George | 31 |
| Saling, Neil Edmund | 30 |
| Sanders, Lewis Claude (deceased) | 17 |
| Sandoz, Emile Henry | 39 |
| Savory, Jack | 28 |
| Saxe, Merle Kenneth | 25 |
| Say, Donald Martin | 29 |
| Scherer, Walter Hirschell | 26 |
| Schlegel, Joseph Theodore | 25 |
| Schmitt, Gordon Walcott | 30 |
| Schmitt, Roland Alfred | 37 |
| Schoeffel, Raymond Louis | 17 |
| Shofren, Harold Wayne | 30 |
| Shriner, Lloyd Willis | 28 |
| Shultis, Karel Burtis | 30 |
| Sims, Lee Thomas | 23 |
| Smith, Hiram Chester | 18 |
| Soderstrom, Clarence Rudolph | 23 |
| Spaniol, Eugene Michael | 31 |
| Stannard, Frank McNee | 25 |
| Steele, Clair Newcomb | 31 |
| Stephenson, Lee | 32 |
| Stokesbary, Maurice | 25 |
| Straughn, James Alfred | 17 |

Alphabetical List (continued)

| | Year of Graduation |
|--|--------------------|
| Subject, Felix August | 1927 |
| Swall, Lillard Trask | 32 |
| Symmes, Daniel T. | 37 |
| Teale, Harold Arthur | 27 |
| Thomas, John Bert | 24 |
| Thomas, Verne | 37 |
| Tolman, John Everett | 23 |
| Toy, Albert Henry | 29 |
| Tunnel, John Wesley | 25 |
| Turner, Arthur Edward | 16 |
| Turner, Harold (deceased) | 20 |
| Van Pelt, Franklin Henry | 38 |
| Van Nice, Thomas Kiefer | 21 |
| Vestal, James Fenix (deceased) | 20 |
| Voss, Vern Wisner | 39 |
| Wake, Selmer Olene | 38 |
| Watts, Worth Phillips | 25 |
| Weatherford, Marion Tasker | 30 |
| Weidman, Joseph | 30 |
| Weiss, Zeno Francis | 23 |
| Welch, Herbert Earl | 26 |
| Wessela, Stillman Joseph | 38 |
| Willard, Jay Harold | 25 |
| Williamson, Russell Willard | 35 |
| Wilson, Alden Reed | 32 |
| Wilson, Gayford Finley | 31 |
| Wilson, Richard Henry | 30 |
| Wolfe, Glenn Alfred | 24 |
| Zimmerdahle, Frank Wm. | 24 |

Industrial Administration Graduates

| | |
|----------------------------|--------------------------|
| Beaumont, Darrell William | Meeker, Cecil Hamilton |
| Benham, Henry Laurens | Meier, Herbert John |
| Clisby, George Bert | Meyers, John Charles |
| Dane, Louis James | Nicholas, Jack Louis |
| Finlay, Keith Ferguson | Pernu, Lauri O. |
| Flood, Einar Johan | Riddle, Warren Luther |
| Heinrich, Fred John | Roner, Fred Arnold |
| Hill, Kenneth Parkinson | Runciman, Eldon George |
| Hutchens, Ronald Fred | Schmitt, Gordon Wolcott |
| Hutchins, John Ryal | Schmitt, Roland Alfred |
| Ireland, Frederick Peter | Spaniol, Eugene Michael |
| Jones, Wilbur William | Steel, Newcombe Clair |
| Lubersky, Albert Raymond | Thomas, Verne |
| McEachern, Alexander Bruce | Van Pelt, Franklin Henry |
| Wilson, Alden Reed | |

OREGON STATE COLLEGE
SCHOOL OF ENGINEERING AND INDUSTRIAL ARTS
CORVALLIS, OREGON

March 14, 1940

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DEPARTMENT OF
INDUSTRIAL ARTS
AND ENGINEERING SHOPS

Dear Sir:

The year nineteen hundred forty marks the twenty-fifth anniversary of the Industrial Arts Department at Oregon State College. A study of the graduates of the Department during the first quarter-century of its existence--especially of their accomplishments, fields of service, and employment progress will be useful to the Department and its graduates.

Answers to many of the most important questions under consideration at the present time can be found only in the careers, experiences, and opinions of the graduates. It is hoped that all graduates, whether in industrial education, or industrial administration will be sufficiently interested in the success of the study to devote a small amount of their time and effort to make, what we believe, will be a valuable contribution to education.

It is our desire to complete the study before the end of the present school year. It will be appreciated if you will fill out the accompanying questionnaire and return it promptly in the stamped addressed envelope. It is fully as important to receive answers from those employed in industrial pursuits or other occupations as from those in teaching positions. You are, therefore, requested to return the questionnaire, no matter what your present occupation. Since many of the answers will be of a rather personal nature, every response will be treated in strict confidence. Neither you nor your school or business will be identified in the tabulation of results. It is quite desirable to have your name as well as the date of your graduation.

If you do not wish to sign your name, please submit the questionnaire without signature, but be sure to give the year of graduation. A summary of the results of this study will be made available to all who cooperate. Please accept our sincere thanks for your cooperation and assistance.

Sincerely yours,

Assistant Professor of Industrial Arts

EDM:T

Inclosure-Questionnaire
Curriculum Charts

Approved: George B. Cox
Head, Industrial Arts Department

Name: _____
Last First Middle

1. Graduated from: (Please check)
 Education with Industrial Arts major
 Industrial Arts Education
 Industrial Administration

Degrees obtained from O.S.C.

2. IMPORTANT: (Please supply information requested)

OCCUPATIONAL EXPERIENCE SINCE GRADUATION: List in re-
Teaching as well as other verse order. Present
occupations position first

[illegible]

3. Indicate the types or kinds of work of which your present position is comprised. (In front of titles which appear below, place the figure 1 before that of the most importance: 2, before that of second importance, and so on. Add to the list if your work is not listed. Do not include any but important phases of your work.)

| <u>TEACHING</u> | <u>NON-TEACHING</u> |
|---|--|
| <input type="checkbox"/> Drawing | <input type="checkbox"/> Owner or proprietor |
| <input type="checkbox"/> Auto mechanics | <input type="checkbox"/> Administrative |
| <input type="checkbox"/> Electrical work | <input type="checkbox"/> or executive |
| <input type="checkbox"/> Finishing & decorating | <input type="checkbox"/> Research |
| <input type="checkbox"/> Industrial science | <input type="checkbox"/> Sales |
| <input type="checkbox"/> Woodworking | <input type="checkbox"/> Operation & |
| <input type="checkbox"/> Sheet metal | <input type="checkbox"/> Maintenance |
| <input type="checkbox"/> Forging & welding | <input type="checkbox"/> Manual |
| <input type="checkbox"/> Machine shop practice | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Coaching | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | |
| <input type="checkbox"/> _____ | |

4. Please indicate by a check mark how you obtained your first position after graduation.

☐ Through a connection resulting from employment before graduation

☐ Through one of the faculty

☐ Through direct inquiry from an employer

☐ Through an advertisement (either my own or my employer's)

☐ Through a member of my family or a friend of the family

☐ Through a graduate of the college

☐ Through the college placement bureau

☐ Through an employment agency other than the one above

Otherwise. Please state how _____

5. Please indicate by a check mark the reason or reasons why you chose your first job.

☐ Because circumstances forced me to do so

☐ Because I had a specific field of work for which I had prepared in college

☐ Because the position was in the general field of the program which I had followed in college.

☐ Because, while I had no very strong preference, the job seemed to offer better opportunities or more interest than others

☐ Because the work was situated in a locality in which I wanted to live

5. (Continued)

_____ Because the job offered a good salary
 _____ Other reasons. Please state them _____

6. Please indicate your purpose in following an industrial arts program before graduation.

_____ I had a distinct liking for industrial arts
 _____ I had no particular preference but thought the industrial arts field offered good opportunities
 _____ I was advised to take up teaching and thought the advice good
 _____ I believed I had some aptitude for teaching
 _____ I discovered that I had some aptitude for mechanical procedures
 _____ I thought the technical preparation would be a valuable background for industrial employment
 _____ I was interested in business administration or management and looked forward to a minor executive position in industry
 _____ I saw a possibility of entering the field of:
 a. technical sales
 b. contracting
 c. manufacturing
 d.
 e.

Other reasons. Please state them _____

7. Please indicate by a check mark when you chose industrial arts as a vocation.

_____ During high school days
 _____ Just before I entered college
 _____ During my college freshmen year
 _____ " " " sophomore year
 _____ " " " junior year
 _____ " " " senior year

8. Please state what your annual earnings have been since graduation

Salary at which I started work _____
 Salary two years after graduation _____
 Salary five years after graduation _____
 Present salary per year _____; yrs. after graduation _____

9. Please indicate certain facts relative to your study or training since graduation.

Strike out the words which do not apply

9. (Continued)

My work since graduation has been of such nature that:

It has required me to study in order to do justice
has not to my job

Additional study (if you have done any of importance)

has been in work closely associated with the
has not program I followed in college

Though not required by the nature of my work, I have
have not
more or less systematically pursued some plan of study

I have not maintained an active interest and have read or otherwise followed some special study in which my interest was awakened in college. The field in which I have studies is

It has not been required, directed, advised, or supervised by my employer or superiors

Please underline the method by which the study has been carried on: enrollment in summer sessions; extension; correspondence; by other means

10. Indicate by a check mark the amount of benefit which you feel you derived from the "cultural" studies in college: such as social studies, languages, literature, music.
- ☐ so little as to be negligible
- ☐ not proportionate to the amount of time spent on them
- ☐ reasonably sufficient to warrant the expenditure of time and energy
- ☐ considerable; I am glad that I pursued these studies
- ☐ indispensable to my intellectual development
11. Please indicate what in your judgment is the order of importance to industrial arts teachers of the following four divisions of subjects. Please place the figure 1 in front of the division which you consider of the most importance, the figure 2 in front of the one of next importance, and so on.
- ☐ Professional--Education for teachers; Business Administration for the industrial administration group
- ☐ The scientific group--sciences, such as mathematics, physics
- ☐ The cultural group--languages, social studies, etc.
- ☐ The technical group--shop work, drawing, etc.

11. Please indicate what in your judgment is the order of importance to industrial arts teachers of the following four divisions of subjects. Please place the figure 1 in front of the division which you consider of the most importance, the figure 2 in front of the one of next importance, and so on.
- _____ Professional--Education for teachers; Business Administration for the industrial administration group
- _____ The scientific group--sciences, such as mathematics, physics
- _____ The cultural group--languages, social studies, etc.
- _____ The technical group--shop work, drawing, etc.

12. What elements essential or important in your present work were omitted from your college program. This question should be regarded in a broad sense and not as applying strictly to subjects of instruction or courses. Please make your answer brief but explicit
-
13. What subjects in your college work now appear to you to have been unessential or unnecessary? _____
-
14. Please indicate your feelings concerning the following points. Strike out the words that do not apply.
- I am ~~dissatisfied~~ ^{satisfied} with my present job
- I am ~~dissatisfied~~ ^{satisfied} with my prospects for promotion
- I find, after a practical trial, that I ~~dislike~~ ^{like} teaching
- On the whole I am ~~glad~~ ^{sorry} I studied ~~Industrial Education~~ ^{Industrial Administration}
15. Please indicate to what extent your college program gave you the proper professional and technical foundation for your work.
- Please check one
- ☐ Little or none
- ☐ Poor, not what it should have been
- ☐ Reasonably good
- ☐ Good
- ☐ Excellent
16. What subjects which you pursued while in college have you found of the most practical or professional value to you? _____
-
17. Please indicate your judgment of the quality or sufficiency of the industrial arts subjects which you studied in college to meet the demands put upon you by your daily work.
- | | |
|---|------------------------------------|
| <input type="checkbox"/> Conspicuously poor | <input type="checkbox"/> Passable |
| <input type="checkbox"/> Poor, not what it should have been | <input type="checkbox"/> Good |
| | <input type="checkbox"/> Excellent |
18. If you employ or supervise college graduates, please indicate the relative weight you give the following qualifications. Please place the figure 1 in front

18. (Continued)

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of that of the most importance, the figure 2 in front of that of next importance, and so on.

- ☐ Evidences or estimates of good character, personality
- ☐ Evidences of initiative and qualities or leadership
- ☐ Scholastic record
- ☐ Training in a particular field or specialty
- ☐ Physical qualities, including appearance and neatness
- ☐ Willingness to assume responsibilities
- ☐ Interest in daily tasks
- ☐ Attention to detail
- ☐ Intellectual curiosity
- ☐ Keeping up with new developments
- ☐ Willingness to cooperate

19. Please indicate the amount you participated in collegiate activities. Please place the figure 1 in front of the activity of your major participation, 2 in front of that of next importance and so on. Add others if the list is not sufficient.

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Athletics | <input type="checkbox"/> Journalism |
| <input type="checkbox"/> Fraternity life | <input type="checkbox"/> School clubs |
| <input type="checkbox"/> Publications | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Dramatics | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Debate | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Music | <input type="checkbox"/> _____ |

20. Please indicate the extent you were dependent upon your own resources for support and for payment of tuition, fees, and expenses.

- ☐ Entirely upon myself
- ☐ More than half dependent upon myself
- ☐ Dependent upon myself to a small degree--less than half
- ☐ Not dependent upon myself at all

21. Please indicate the principal defects of your college program as you now view them in the light of your experience since leaving college. Place the figure 1 in front of the most important defect; the figure 2 in front of that of next importance, and so on. Do not indicate any defect unless you are convinced that it is a real and serious one.

- ☐ Failure to show the probable relationship of the program to your future work
- ☐ Poor methods of teaching
- ☐ Poor quality of teachers

21. (Continued)

- _____ Too much work required
 - _____ Too many courses given at one time
 - _____ Too much shop work and drawing
 - _____ Too much written work and theory
 - _____ Too much time devoted to the study of languages, history, and like studies
 - _____ Too little attention given to the difficulties and problems of the individual student
 - _____ Too much weight given to examinations
- Please name others that you consider important _____
-

22. Please give in short concise form any constructive criticisms or suggestions you may wish to offer for the improvement of our Industrial Arts program.

(WRITE YOUR CRITICISMS OR SUGGESTIONS ON THE BACK OF THIS PAGE)

For the benefit of earlier graduates and others not familiar with the present Industrial Arts curricula, we have enclosed two curriculum analysis charts.

The curriculum in Industrial Arts Education is designed to give the type of training required for successful teaching in the public schools and for entrance into college teaching. Training in technical and industrial processes forms the main portion of the work of the first two years. The last two years are devoted to the science and philosophy of education. The enclosed chart shows the division indicated above and the opportunities provided for the technical and nontechnical electives.

The curriculum in Industrial Administration is based on a combination of instruction in the fundamental manufacturing processes and the principles of business administration. It is designed to meet the increasing demand for workers in industry who are trained in the basic sciences and fundamentals of industrial organization and management. Provision is made for election of both technical and nontechnical subjects that will meet the needs of the students.

NAME _____ PRIMARY _____ TECHNICAL MAJOR _____ SECONDARY _____ MINORS _____

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

| YEAR | FRESHMAN | | | SOPHOMORE | | | JUNIOR | | | SENIOR | | | SUMMARY OF CREDITS |
|--|-------------------|------------------|------------------|-----------------------|-------------------------------|--------------------------------------|---------------------------------|---------------------------------|----------------------------------|--------------------------|--------------------------------|--|--------------------------|
| TERM | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | |
| BASIC TECHNOLOGY & RELATED ARTS | PATTERN MAKING | METH. IN WOOD | METH. IN WOOD | MCH. & TL MAINT. | | | | | | | | | REQ'D TECH. 49 |
| | FOUNDRY | FORGING | MCH. SHOP | FR. HAND DRAW | IND. ARTS DESIGN | ART METAL OR SHEET METAL | MILLWORK OR PROD MCH. WK. | CARP'TRY OR HEAT TR. | WOOD & MET. FIN. | PRACT. ELECTRIC | STAGE- CRAFT OR JRNL. | COM. WDS. OR MATERIALS OF ENGR. | DR. & DES. 21 |
| | MECH. DRAW | MECH. DRAW | MECH. DRAW | ARCH. DRAW | ARCH. DR. OR DES. GEOM. | ARCH. DR. OR MCH. DR. | AUTO MECH. | AUTO MECH. | AUTO MECH. | | | | ELEC. 18 88 |
| EDUCATION & APPLIED PEDAGOGY | | | | | | | | | | GEN. SHOP & ITS PROB. | WRITTEN & VISUAL AIDS | SHOP PLAN & ORGAN. | REQ'D 37 |
| | | | | | | | EDUC. PSYCH | HIST. OF MAN. & IND. ARTS | METH. & MATERIALS OF I. A. | TRADE ANALY. | SUPERV. | TEACHING | ELEC. 9 |
| PHYSICAL BIOLOGICAL & SOCIAL SCIENCE | | | | | | | | | | | | | 24 |
| | | | | | | | SEC. ED. | PRIN. OF TEACH. | MEAS. IN EDUC. | | | | |
| WRITTEN & ORAL EXPRESSION | | | | | | | | | | | | | 18 |
| | ENGLISH COMP. | ENGLISH COMP. | ENGLISH COMP. | BUS. ENG. OR JRNL. | EXTEN. SPEAK. | PARLIM. PROC. | | | | | | | |
| MILITARY PHYSICAL ED. ELECTIVES | | | | | | | | | | | | | REQ'D 12 |
| | | | | | | | | | | | | | ELEC. 18 |
| TERM CREDITS | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 204 |

NAME _____ PRIMARY _____
 TECHNICAL MAJOR SECONDARY _____

CURRICULUM IN INDUSTRIAL ADMINISTRATION

| YEAR | FRESHMAN | | | SOPHOMORE | | | JUNIOR | | | SENIOR | | | SUMMARY OF CREDITS |
|--|------------------------------|---------------|---------------|--------------------|-------------------------|--------------------------|----------------------------|--------------------|-----------------------|--------------|-----------------|-----------------|--------------------|
| TERM | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | 1ST. | 2ND. | 3RD. | |
| BASIC TECHNOLOGY & RELATED ARTS | PATTERN MAKING | METH. IN WOOD | METH. IN WOOD | MCH. & TL. MAINT. | | | | | | | | | REQ'D TECH. 49 |
| | FOUNDRY | FORGING | MCH. SHOP | FR. HAND DRAW. | IND. ARTS DESIGN | ART METAL OR SHEET METAL | MILLWORK OR PROD. MCH. WK. | TIME STUDIES | | TRADE ANALY. | INDUST SEMINAR | PROD. ENGR. | DR. & DES. 20 |
| | MECH. DRAW. | MECH. DRAW. | MECH. DRAW. | ARCH. DRAW. | ARCH. DR. OR DES. GEOM. | ARCH. DR. OR MCH. DR. | PRACT. ELECTRIC. | MATERIALS OF ENGR. | MET'LOG OR COM. WOODS | | PROD. ENGR. | | ELEC. 22 91 |
| BUSINESS ORGANIZATION AND ADMINISTRATION | LOWER DIVISION COURSES IN | | | | | | ELE. OF ORGAN. | ELE. OF FINAN. | ELE. OF MARKET. | PERSON. MGT. | BUS. STATISTIC. | MONEY & BANKING | REQ'D 41 |
| PHYSICAL BIOLOGICAL & SOCIAL SCIENCE | MATH. OR SCIENCE | | | SOCIAL SCIENCE | | | ACCT. | ACCT. | ACCT. | LABOR PROBS. | BUS. LAW | BUS. LAW | |
| WRITTEN & ORAL EXPRESSION | ENGLISH COMP. | ENGLISH COMP. | ENGLISH COMP. | BUS. ENG. OR JRNL. | EXTEM. SPEAK. | PARLIM PROC. | | | | | | | REQ'D 24 |
| MILITARY PHYSICAL ED. ELECTIVES | PHYSICAL EDUCATION & HYGIENE | | | | | | | | | | | | REQ'D 12 |
| | MILITARY SCIENCE - 6 CR. | | | | | | GENERAL ELECTIVES | | | | | | ELEC. 18 |
| TERM CREDITS | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 204 |