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A STUDY OF GRADUATES WITH MAJORS IN INDUSTRIAL EDUCATION FROM KANSAS STATE TEACHERS COLLEGE, PITTSBURG, FROM 1949 TO 1955

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Kansas State Teachers College of Pittsburg

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A STUDY OF GRADUATES WITH MAJORS IN INDUSTRIAL EDUCATION
FROM KANSAS STATE TEACHERS COLLEGE, PITTSBURG,
FROM 1949 TO 1955

A Thesis Submitted to the Department of Industrial Education
in Partial Fulfillment of the Requirement of the
Course in Research Thesis 390

By

William E. Saunders

183

KANSAS STATE TEACHERS COLLEGE

Pittsburg, Kansas

April 16, 1956

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ABSTRACT

The findings of this study include the status and location of the graduates, courses which have been the most helpful, and their suggestions or acknowledgements to the Industrial Education and Art Department of Kansas State Teachers College, Pittsburg, Kansas.

The information which was used in developing this study was obtained by sending questionnaires to all graduates of the Department from 1949 to 1955.

The findings seem to imply that:

1. Of the 75.95 per cent which are employed in educational work, 63.32 per cent are now teaching in a junior or senior high school.

2. Of the 15.03 per cent who did not plan to stay in educational work, 72.5 per cent are leaving because of low salaries.

3. The salary for a graduate with no experience and with a bachelor's degree was \$3,603 while a graduate with experience and a bachelor's degree was \$3,973.

4. A master degree graduate's salary was somewhat higher than those with a bachelor's degree.

5. Mathematics was chosen as the best suited minor field for a person majoring in industrial education.

6. Over one-half of the graduates suggested more experience be given in the general shop area.

7. Shop Organisation and Management was chosen as being the most helpful of the undergraduate courses while Instructional Methods in Industrial Education was rated as the most helpful on the graduate level.

8. Of the general education courses selected, mathematics was chosen to be the most helpful.

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CHAPTER I

INTRODUCTION

The purpose of this study was to obtain and interpret information concerning the Bachelor of Science and Master of Science Graduates in the Industrial Education and Art Department of Kansas State Teachers College, Pittsburg, Kansas, from 1949 to and including 1955.

In a report prepared by Martin E. Genser,¹ the following was stated:

In order to evaluate the effectiveness of any program of education, every institution needs to know the degree of success, adjustment, and opinion of its graduates.....

The contents of this study pertain to the status of the graduates, the courses which were regarded as most helpful, the type of work the graduates are doing, and the voluntary suggestions or constructive criticisms which would make for an improvement in the Industrial Education and Art Department of the College.

Need for the Study

The writer became directly interested in the subject during the summer session of 1955. With the opportunity to

¹Martin E. Genser, "A Follow-Up Study of Graduates with Majors in Industrial Education from 1935-1949," Unpublished report, Kansas State Teachers College, Pittsburg, Kansas, 1950, p. 1.

continue schooling, various questions appeared. Of these, the most pertinent were:

1. Which is the better, an industrial occupation or the teaching profession?
2. In what field should more work be taken?
3. What industrial education courses would be the most helpful?
4. What general education courses would be the most helpful?
5. What minor field would be the best for the industrial education major?

At that time, it was decided to examine these matters as the basis for a master's thesis. By adding other pertinent questions to the questions already at hand, a follow-up study was proposed.

This study intends to present a typical graduate from Kansas State Teachers College, Pittsburg, showing the courses which have been, in the estimation of the former student, the most helpful, the type of work the graduate is doing, and his acknowledgments or suggestions to the Industrial Education and Art Department of the College.

In a report prepared by Clifford L. Bishop,² Troyer and Face found an even more definite statement was made concerning the responsibilities of the colleges for graduates of

²Clifford L. Bishop, "Participation of Colleges and Universities in Program of Internship Teaching," Unpublished Doctor's Dissertation, University of Colorado, Boulder, Colorado, 1947, p. 18.

today. The report reads as follows:

Depending on its scope, the follow-up study can contribute to many phases of the college's program. From it, suggestions can be drawn for the selection and guidance program, the general education program, the professional program. It can help students gain keener appreciation of what is likely to face them after they leave school. It can contribute substantially to the improvement of college instruction.....

There was never a time in the history of our schools when it is more significant for all to critically examine themselves and to consider the aims and objectives of their present curriculum.

Method of Research

Permission was obtained from Dr. L. L. Tracy, Director of Placement and Field Services, Kansas State Teachers College, Pittsburg, Kansas, to use the official alumni records of his office to secure a mailing list of all 1949 to 1955 Industrial Education graduates.

The writer then proceeded to develop a questionnaire³ which would be both short and adequate to secure the desired information. Other follow-up studies were evaluated and used in the preparation of the questionnaire. After suggestions for improvement from fellow graduate students were obtained, the questionnaire was mailed to 370 graduates or to one hundred per cent of all graduates of the Industrial Education

³Infra, pp. 45-47.

and Art Department from 1949 to and including 1955.

The advisability of using the questionnaire in this way is well stated by Leonard V. Kocs:⁴

Not only is the questionnaire method used in large proportions of education investigations, not only do we find it applied to many divisions and on all levels of the field of education to ascertain practice, basic data, and judgment, but it is also a valuable source of data procurable usually in no other way.

After an interval of seventeen days from the date of the first mailing, a second request⁵ was mailed to all graduates from whom no reply had been received. The questionnaire could have been sent back anonymously if the respondent so desired. For these reasons, the writer feels the respondents' answers could be considered highly reliable. A total of 70.81 per cent of all questionnaires was returned within a period of 47 days. Data from the questionnaires were recorded on a master sheet. The material was then analyzed and arranged in tables, the interpretation and discussion of which constitute this study.

Limitations of the Study

The questionnaire technique presents perhaps the greatest limitations to the study. This method is looked upon critically and with disfavor by some writers and research workers;

⁴Leonard V. Kocs, The Questionnaire In Education (New York: The Macmillan Co., 1928), p. 62.

⁵Infra, p. 49.

others feel that the questionnaire is one of the best techniques for polling a large scattered group over a vast area. Nevertheless, it is recognized that some limitations may result from misunderstanding of questions on the part of the respondent who completes the questionnaire, as well as the possible misinterpretation by the writer of some of the responses.) The writer also realizes that some of the questionnaires were sent to graduates who were well qualified but did not take time to reply. The other reasons for failing to receive responses from one hundred per cent were that the correct address was not obtainable or the graduate was deceased.

This study covers only graduates of the Industrial Education and Art Department of Kansas State Teachers College, Pittsburg, Kansas, from 1949 to and including 1955.

There is no attempt to recommend a completely new program for the Industrial Education or Art Department in any way. Nevertheless, it is hoped that the results of this study may prove helpful to the department and the college by the number and variety of considered suggestions that are advanced.

CHAPTER II

BACKGROUND OF THE STUDY

For purposes of comparison, it is necessary to discuss a number of studies of this nature in order to bring the reader up-to-date on the subject.

Martin E. Gonsler¹ found Meyer's study of Oregon State College Industrial Arts Graduates from 1915 to 1940 disclosed the following: Of the seventy per cent returning their questionnaires, forty-five per cent were located within the state, with 90.5 per cent employed in the educational field.

Meyer brought out these additional facts in his study:

When asked to rank the professional, scientific, cultural and technical groups of studies according to the values placed upon them, the following rating was given:

Professional	20.5 per cent
Scientific	4.3 per cent
Cultural	1.2 per cent
Technical	74.0 per cent

Graduates of industrial-arts-education curriculum are as a whole, quite happy in their work if their answers to the questionnaire are valid criteria. Eighty-eight per cent are satisfied with their position, though several indicated that prospects for promotion were not too bright. Only four graduates expressed a dislike for teaching after having given it a fair trial. Ninety-six per cent of the returns expressed happiness that they had prepared for and followed the teaching of Industrial Arts.....

¹Martin E. Gonsler, "A Follow-Up Study of Graduates with Majors in Industrial Education from 1935 to 1949," Unpublished report, Kansas State Teachers College, Pittsburg, Kansas, 1950, pp. 2-3.

Conser² also reported a study made by Senteney and Maddux of the University of Missouri Graduates of 1920 to 1949, with majors in Industrial Education, in which these results were found: 92 per cent of the questionnaires were returned with 54 per cent located within the state, and 90 per cent employed in educational work of some type.

Other findings which Senteney and Maddux brought out dealt with the salary and age of the graduates. Some of their findings were as follows:

The average annual salary of the graduates with Doctor's degrees was \$6,679, while the average age of these graduates was 44.2 years.....

The average annual salary of the graduates with Master's degrees who were working in the field of education was \$4,014, while the average of those outside of education was \$5,084.....

The average age of those with Master's degrees was forty-one years.....

The average annual salary of graduates with a Bachelor's degree who had remained in the field of education was \$3,935, while the average of those who were no longer working in the field of education was \$8,825.....

The average age of the graduates with Bachelor's degrees was thirty-one years.

When the University of Missouri Industrial Education majors were asked to rate their courses, Senteney and Maddux³ found these results:

A preponderance of those who rated the industrial education courses taken at the University of Missouri thought that these courses had been some help to them in the work in which they were engaged.

²Ibid., pp. 3-4.

³Ibid., pp. 11-12.

A very small percentage thought that the courses had been of little help. In terms of numbers, the graduates found Selection and Organization of Subject Matter, and Principles of Trade and Industrial Teaching, in that order, to be of more help than any other courses. About 19 per cent of those rating History of Industrial Education said that it had been of little help in their work.....

Martin E. Gonsler's⁴ study of Kansas State Teachers College, Pittsburg, Kansas, Graduates in Industrial Education from 1935 to 1949 found these results: Of 77 per cent who returned their questionnaires, 75 per cent were located within the state and 83 per cent were employed in the educational field.

Gonsler's⁵ study gives the following suggestions:

Offer practice teaching under conditions found in the high schools.....

Require a maintenance course.....

Keep the department up to date.....

Organize more field trips.....

More training in various areas.....

Offer shop courses on graduate level.....

In regard to salary, living conditions, and status of Kansas State Teachers College, Pittsburg, Kansas, Graduates of the Industrial Education Department from 1935 to 1949, the following additional items were brought out in the Gonsler's⁶ study:

The average salary for a Bachelor's degree of \$3,145 and for the Master's degree of \$3,413 indicates to the entering college student who plans to

⁴Ibid., pp. 1v-5.

⁵Ibid., pp. 34-35.

⁶Ibid., pp. 33-34.

major in industrial education, that there is a livable wage in store for him. Also, he can expect a reasonable opportunity for marriage and family life, since 91 per cent of the graduates are married and 75 per cent of the families have children. The fact that 42 per cent of the graduates own their own homes would indicate that many teaching positions have some degree of permanence.....

The graduates think the work in the Industrial Education Department is very helpful to them, for the most part. They only regret that they cannot take all of the courses that would be of help to them. Forty-one of the graduates feel that the courses in the Education Department are not of a practical nature and that there is too much repetition among some of the required education courses for industrial education majors.

In this chapter, background information on studies similar to this one has been given. In our next chapter the personal status of the graduates as related to their work and accomplishments will be examined.

CHAPTER III

PERSONAL STATUS AND ACCOMPLISHMENTS

The purpose of this chapter is to present pertinent information on the personal status and accomplishments of the Industrial Education and Art Department graduates of Kansas State Teachers College, Pittsburg, during the period of 1949 to 1955 inclusive.

Location of Graduates

Table I shows the break-down by states, and the degrees held by the respondents. When this report was made, thirty-two states were represented by 262 graduates, with 143, or 54.58 per cent, making their residence within the state of Kansas.

TABLE I

LOCATION OF GRADUATES BY STATES

Location by States	a	aa	aaa	Totals
Arizona	3	1	0	4
Arkansas	2	2	0	4
California	3	5	0	8
Colorado	1	0	0	1
Florida	1	0	0	1
Illinois	1	1	0	2
Indiana	3	3	0	6
Iowa	5	0	0	5

TABLE I (Continued)
LOCATION OF GRADUATES BY STATES

Location by States	*	**	***	Totals
Kansas	83	58	2	143
Kentucky	1	0	0	1
Louisiana	0	1	0	1
Maryland	1	0	0	1
Michigan	3	0	0	3
Minnesota	1	0	0	1
Missouri	12	16	0	28
Montana	1	0	0	1
Nebraska	2	1	0	3
New Jersey	2	0	0	2
New Mexico	1	0	0	1
New York	1	1	0	2
North Carolina	1	0	0	1
Ohio	3	2	0	5
Oklahoma	7	6	0	13
Oregon	3	0	0	3
Pennsylvania	2	0	0	2
South Carolina	2	1	0	3
South Dakota	1	0	0	1
Tennessee	0	1	0	1
Texas	6	4	0	10
Virginia	1	0	0	1
Washington	2	0	0	2
West Virginia	1	1	0	2
Totals	156	104	2	262

* Bachelors.
** Masters.
*** Doctors.

Employment of Graduates

Of the 262 graduates, 199, or 75.95 per cent, were engaged in educational work of some type. Table II, page 12, shows the types of employment in which the graduates are engaged.

TABLE II

EMPLOYMENT OF GRADUATES

Types of Employment	e	ee	eee	Totals
Administrative Position	1	4	1	6
Armed Forces	8	1	0	9
Class Room Instructors	86	68	0	154
College Instructors	2	11	1	14
Directors and Supervisors	1	10	0	11
Industry and Business	36	9	0	47
Students	13	1	0	14
Did not answer				7
Totals	149	104	2	262

e Bachelors.
 ee Masters.
 eee Doctors.

Positions Held by Graduates

According to the data in Table III, page 13, twenty-two graduates were holding positions in colleges, while 167, or 63.32 per cent, were teaching in the junior or senior high schools.

TABLE III

POSITIONS HELD BY GRADUATES

Position Held	*	**	***	Totals
Armed Forces	8	1	0	9
Assistant Professor	0	0	1	1
Board of Education	0	1	0	1
College Student	13	1	0	14
Company Workers	8	20	0	28
Department Head	0	0	1	1
Instructor, College	2	11	0	13
Instructor, Disciplinary	1	0	0	1
Instructor, High School	72	53	0	125
Instructor, Jr. College	2	3	0	5
Instructor, Jr. High	20	22	0	42
Instructor, Special	0	2	0	2
Laborer	6	1	0	7
Linotype Operator	3	0	0	3
Publisher	0	1	0	1
Salesman	1	1	0	2
Self Employed	2	0	0	2
Did not answer				2
Totals	140	118	2	262

* Bachelors.
 ** Masters.
 *** Doctors.

Salaries of Graduates

Although the salaries mentioned in this section may change somewhat with the signing of contracts this spring, it may be of interest to the reader to know the present facts.

When asked if the school in which the respondent taught had a regular salary scale, 118 graduates, or 45.03 per cent, stated that their schools had a salary scale; while 99 graduates, or 37.77 per cent, stated that their schools did not have a salary scale. Forty-five graduates did not answer the question.

In regard to salary increments, 125 graduates, or 47.7 per cent, said their salary increments had been satisfactory; seventy-one graduates, or 27.2 per cent, replied that their salary increments in their respective schools were not satisfactory.

In the annual report,¹ prepared by the Placement Bureau of Kansas State Teachers College, Pittsburg, Kansas, covering the period of October 1, 1954 to September 30, 1955 the following data on salaries were given:

For an inexperienced man with a Bachelors degree in Industrial Arts, the average salary was \$3,603. The average salary for an experienced man with a Bachelors degree was \$3,973. "Salaries for the Masters degree were somewhat

¹Kansas State Teachers College, "Placement Bureau Annual Report 1954-1955," Unpublished material, Kansas State Teachers College, Pittsburg, Kansas, 1955.

higher, but many teachers could have obtained better salaries had they not wanted positions in a specific locality."

In another such report prepared by Kansas State Teachers College, Pittsburg, by a committee of eight on the "Report of the Committee on Teacher Supply Problems in Kansas for the Next Twenty Years for the Governor's Conference on Education,"² is found this information concerning Kansas salaries:

Further information on the current salary situation in the Kansas area was obtained from a survey study of students, largely from Kansas, attending the 1955 summer term at KSTC, Pittsburg. The median experience of the group of 619 teachers was 8 years plus and some 40 per cent held Bachelor degrees. The median salary for 1954-55 was found to be \$3020 with the middle fifty per cent ranging from \$2590 to \$3460. Only 10 per cent, mainly principals, reported salaries above \$4150. The median of salaries reported for 1955-56 was \$3230, an increase of \$210 over 1954-55.....

A second test of possibly greater significance than the first involves a comparison of average salaries in Kansas with those of the United States and of bordering states. The Research Division of NEA estimated the average salary of classroom teachers in Kansas for 1954-55 to be \$3350 which was \$466 or approximately 12 per cent under the average of \$3816 for the 48 states. This gives Kansas salaries a ranking in 31st place. The comparison appears less favorable to our state, when it is recalled that Kansas has generally ranked well above average in rating on per capita wealth and income per person.....

²"Report of the Committee on Teacher Supply Problems in Kansas for the Next Twenty Years for the Governor's Conference on Education," Unpublished material, Kansas State Teachers College, Pittsburg, Kansas, 1955, p. 9.

Degrees Held by Graduates

Of the 262 graduates replying, 157, or 59.92 per cent hold a Bachelor of Science in Education Degree. One hundred and five graduates, or 40.07 per cent, hold a Master of Science in Education Degree with two graduates holding the Doctor of Education Degree. It was found that nineteen were full time graduate students with quite a number indicating that they were attending summer sessions, night school and various extension classes during the year. Table IV indicates the degrees which graduates now hold and the year graduated.

TABLE IV

DEGREES WHICH GRADUATES NOW HOLD AND YEAR GRADUATED

Degree Held	Year Graduated	Total
Bachelor of Science in Education	1949	20
Master of Science in Education	1949	7
Bachelor of Science in Education	1950	25
Master of Science in Education	1950	20
Bachelor of Science in Education	1951	28
Master of Science in Education	1951	22
Doctor of Education	1951	1
Bachelor of Science in Education	1952	20
Master of Science in Education	1952	14
Bachelor of Science in Education	1953	22
Master of Science in Education	1953	14
Bachelor of Science in Education	1954	19
Master of Science in Education	1954	13
Doctor of Education	1954	1
Bachelor of Science in Education	1955	22
Master of Science in Education	1955	13
Did not answer		1
Total		262

Minor Field of Graduates

Table V, page 18, gives the breakdown of the minor field which the graduates chose while completing an industrial education major. A number of graduates have single minors; while others have double minors. "This is a natural situation and a wise one, for the broader the background, the more qualified the graduate."³

In the minor fields there is more diversity, but this is to be expected. Physical education seems to have been the favorite minor with sixty-five graduates choosing it; social science was second choice with forty-three graduates using it as their minor field. There was a total of forty different minor fields chosen by the graduates which indicates the interests of industrial education and art majors.

³Ralph F. Evens, "A Study of Teacher Assignment Practices in Secondary Schools of the North Central Association," North Central Association Quarterly, XVI (January, 1942), pp. 271-273.

TABLE V

MINOR FIELD OF GRADUATES

Minor Field	Frequency
Art	1
Art and English	1
Biological Science	6
Biological Science and Physical Science	1
Business	5
Commerce	9
Commerce and Physical Science	1
Crafts	1
Elementary Education	1
English	5
English and Biological Science	1
Journalism	1
Journalism and Social Science	1
Language and Literature	1
Mathematics	28
Mathematics and Commerce	1
Mathematics and English	2
Mathematics and Physical Science	18
Music	3
Psychology	3
Psychology and Physical Science	1
Physical Education	65
Physical Education and Biological Science	1
Physical Education and Commerce	2
Physical Education and English	1
Physical Education and Language and Literature	2
Physical Education and Mathematics	4
Physical Education and Physical Science	1
Physical Science	18
Social Science	43
Social Science and Biological Science	2
Social Science and Commerce	2
Social Science and English	2
Social Science and Language and Literature	1
Social Science and Mathematics	5
Social Science and Music	1
Social Science and Psychology	1
Social Science and Physical Education	10
Social Science and Physical Science	44
Could not use	2
Did not answer	4
Total	262

Teaching Experience of the Graduates

Since this study covers the past six years, it is evident that some have had the opportunity to obtain more experience than others. Table VI shows the years of experience and the frequency of each year of experience.

TABLE VI

TEACHING EXPERIENCE OF THE GRADUATES

Years of Experience	Frequency
0	48
1	6
1½	30
2	6
2½	19
3	35
3½	1
4	21
5	33
6	12
7	10
8	11
9	5
9½	1
10	3
11	2
12	5
13	2
14	4
15	1
16	1
18	1
20	2
24	1
28	2
Total	262

Industrial and Trade Experience

Table VII, page 21, shows the type and number of years of industrial or trade experience of the graduates. Seventy-three, or 28 per cent, had no experience; while 72 per cent had experience of some type.

Graduates' Memberships in Professional Organizations

Table VIII lists the professional organizations in which graduates hold membership. There were 59 organizations represented with some graduates belonging to two or more and with a few belonging to none. Two hundred thirty-five graduates, or 89.03 per cent, were members of the state teachers associations; one hundred thirty-five graduates, or 51.5 per cent, were members of the National Education Association; and 67, or 25.5 per cent, belonged to a local teachers association.

TABLE VIII

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Name of Organization	Frequency
State Teachers Association	235
National Education Association	135
Local Teachers Association	67
State Industrial Education Association	52
Epsilon Pi Tau	44
American Vocational Association	35
City Teachers Association	31
State Vocational Education Association	30
County Teachers Association	20
American Industrial Arts Association	18
Parent Teachers Association	10
State Secondary School Principals Association	9
A. E. A.	8
Internal Graphic Arts Education Association	7
Alumni Association	6
Phi Delta Kappa	6
Kappa Delta Pi	6
Industrial Arts Club	5
State Guidance and Personnel Association	4
Education Club	3
City Superintendent's Association	2

TABLE VIII (Continued)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Name of Organization	Frequency
Congress of Industrial Organization	2
Future Teachers of America	2
Independent Education Association	2
National Graphic Arts Association	2
State Elementary Principals Association	2
State Negro Education Association	2
State Publishers Association	2
Trade and Industry Association	2
American Federation of Labor Teachers Union # 420	2
Air Line Pilots Association	1
American Council of Industrial Teachers Education	1
American Instructors of the Deaf	1
A. I. M. E.	1
American Seed Trade Association	1
American Society For Engineering Education	1
American Society of Lubrication Engineers	1
American Society of Mechanical Engineers	1
American Society of Tool Engineers	1
American Welding Society	1
I. A. T. T.	1
I. S. E. A.	1
K. A. E. A.	1
K. I. E.	1
K. G. A.	1
Kansas Society for Exceptional Children	1
Kansas State American Legion School Masters Club	1
N. B. A.	1
National Association of Industrial Teacher Trainer	1
National Supervision Association	1
Phi Omega Phi	1
Printing House Craftsman	1
Society of American Military Engineers	1
Society of Automobile Engineers	1

Chapter III has presented the graduates' personal status in connection with their work and accomplishments. It has been pointed out that 32 states were represented by the graduates with 54.58 per cent making their residences within the state of Kansas. Seventy-five and ninety-five hundredths per cent are employed in some type of educational work with 63.32 per cent teaching in the junior or senior high schools. Most of the graduates stated their school systems have a salary scale and that salary increments have been satisfactory for the preceding years. There was an indication that the graduates were furthering their education in some manner. The minor field in which the respondent had chosen as his minor field was physical education and social science was next in frequency. Seventy-two per cent had none. It was found that the graduates were active in their professional organization inasmuch as most of the respondents belong to two or more organizations; however, there were a few who belonged to none.

Chapter IV presents the graduates' rating of courses taken at Kansas State Teachers College, Pittsburg, both in industrial education and general education, along with their professional viewpoints.

CHAPTER IV

PROFESSIONAL VIEWPOINTS OF THE GRADUATES

The ratings of industrial education and general education courses are reported in the form of tables. The major course classification of subjects is covered. That is, for example, the general group of courses in drawing and design is reported, assuming that there would be several courses of similar or different emphasis.

Further viewpoints are brought out in regard to: The best suited minor for an industrial education major, would the respondent return to college if granted a leave of absence or a partial salary, and does he plan to attend the summer session of 1956 at Kansas State Teachers College, Pittsburg, Kansas.

Rating of Undergraduate Industrial Education Courses

Shop Organization and Management ranked above all other courses in industrial education, according to Table IX, page 27. Drawing and Design was a close second with Methods of Teaching Industrial Arts third, and Maintenance Problems fourth. Various other course ratings of industrial education appear in the table.

TABLE IX

RATING OF UNDERGRADUATE COURSES TAKEN BY GRADUATES

Name of Course	1	2	3	4	5	Totals
Art	7	3	3	3	8	24
Auto Mechanics	8	2	2	1	0	13
Crafts	0	0	0	0	1	1
Drawing and Design	24	33	22	22	27	128
Electricity	4	1	0	0	1	6
Finishing	1	17	14	6	9	47
General Shop	15	15	13	17	5	65
Highway Safety and Drivers Training	7	4	9	9	4	33
Introduction to Audio-Visual Aids	0	6	4	8	14	32
Leather-Tooling	0	2	5	1	1	9
Maintenance Problems	25	18	18	30	21	112
Metal work	12	8	14	12	9	55
Methods of Teaching Industrial Arts	21	25	33	23	25	127
Photography	0	5	1	4	4	14
Printing	24	3	4	4	1	36
Shop Organization and Management	22	45	28	25	39	159
Supervised Teaching	13	13	28	30	20	104
Upholstery	1	3	6	4	10	24
Welding	1	7	8	7	12	35
Wood Technology	0	1	1	10	4	16
Woodworking	47	23	17	16	17	120
Could not use						17
Did not answer						13

Rating of Graduate Industrial Education Courses

A number of graduates indicated they were unable to rate these courses due to not having taken some of the courses; however, of the one hundred and six graduates rating the courses, it was found that Instructional Methods of Industrial

Education was rated as number one. Occupational Analysis ranked second. The remainder of the courses followed at close intervals as shown in Table X.

TABLE X

RATING OF GRADUATE COURSES TAKEN BY GRADUATES

Name of Course	1	2	3	4	5	Totals
Adult Program in Industrial Education	1	1	3	7	11	23
Advanced Audio-Visual Problems	1	1	5	4	3	14
Course Construction	16	17	20	15	8	76
Development of Modern American Industry	0	1	1	8	1	11
General Shop	11	2	5	14	13	45
History of Industrial Education	3	8	12	6	9	38
Instructional Methods of Industrial Education	59	20	8	15	7	109
Occupational Analysis	24	27	21	12	19	103
Organization and Administration of Industrial Education	15	23	8	19	11	76
Philosophy of Industrial Education	7	8	15	12	13	55
Practicum in Industrial Education	2	7	6	3	5	23
Research and Problem	2	2	4	7	6	21
Research and Thesis	1	3	6	4	11	25
Research Methods	2	3	3	7	9	24
School Shop Building Planning and Shop Management	2	13	15	8	9	47
Seminar in Industrial Education	5	8	9	5	5	32
Tests and Measurements in Industrial Education	9	17	20	15	21	82
Could not use						18
Did not answer						83

Suggested Minor Field

One of the more pertinent questions which confronts the industrial education major is: "What minor field would be most advantageous with an industrial education major?" According to the graduates' viewpoints, mathematics was chosen as the best suited minor with physical science second. The various other minor fields are shown in Table XI in the order rated.

TABLE XI

SUGGESTED MINOR FIELD AS CHOSEN BY THE GRADUATES

Suggested Minor Field	Frequency
Mathematics	97
Physical Science	53
No minor field	17
Social Science	16
Physical Education	15
Art	7
Business Administration	7
Psychology	7
Biological Science	6
English	6
Journalism	5
Guidance	4
Language and Literature	2
Library Science	2
Could not use	11
Did not answer	7

General Education Courses Which Were Most Helpful

Table XII gives a break-down of general education courses in term of helpfulness to the graduates. Mathematics seemed to be the most helpful with general psychology chosen second, physical science third and guidance fourth. The following table lists the courses and shows their ratings.

TABLE XII

RATING OF GENERAL EDUCATION COURSES

Name of Course	1	2	3	Totals
Accounting	0	1	0	1
American Heritage	0	2	2	4
Biology	4	0	2	6
Business Law	0	0	4	4
Chemistry	1	2	12	15
Child Psychology	0	2	0	2
Civics	0	0	1	1
Curriculum Planning	1	6	0	7
Economics	0	4	0	4
Educational Measurements	13	9	7	29
Educational Psychology	3	1	2	6
Elements of Electricity	0	1	0	1
Elementary School Supervision	0	1	0	1
English	2	6	13	21
Extra Curricular Activities	1	1	4	6
Fine Arts	2	0	1	3
General Psychology	32	28	30	80
Geology	1	1	0	2
Guidance	20	15	5	40
Health	5	0	3	8
Humanities	1	0	2	3
Mathematics	46	21	14	81
Modern Family	1	0	0	1
Personnel Management	0	1	0	1
Physics	1	2	1	4
Physical Science	6	19	17	42
Statistics of Education	0	0	6	6

TABLE XII (Continued)

RATING OF GENERAL EDUCATION COURSES

Name of Course	1	2	3	Totals
Secondary Education	2	1	1	4
Secondary School Supervision	0	1	0	1
School Administration	8	0	0	8
School Finance	4	0	2	6
Sociology	0	6	0	6
Supervised Teaching	2	0	2	4
Typing	2	1	6	9

Security in Teaching

Forty graduates, or 15.03 per cent, do not plan to stay in the educational field. Fifty-six graduates did not answer while 166, or 63.35 per cent, plan to stay in the teaching profession. Table XIII, page 31, is composed of comments made by the graduates who have chosen another occupation after preparation for the teaching profession. Seventy-two and five-tenths per cent of the forty graduates who do not plan to remain in the educational field are leaving due to low salaries.

TABLE XIII

REASONS GIVEN FOR LEAVING THE TEACHING PROFESSION

Comment	Frequency
Money.	2
More money.	2
Salary.	2
Higher salary.	2
More income.	1
Depends on salary.	1
Too poor salary.	1
Depends on salary and class load.	1
Salary is not enough and want too much work.	1
Not enough money and too much time spent on the job.	1
There are two reasons (1) salary and (2) hours and working conditions.	1
Salary too low, work is not interesting enough.	1
Due to salaries and amount of added education needed periodically and no future advancement.	1
The salary is too low for me to support my family.	1
Impossible to support family of six on salary.	1
It all depends on salaries in the next few years.	1
If pay doesn't get better, I am not teaching.	1
The pay must get better.	1
Can make more money in printing trade.	1
Money in teaching, already making fifty per cent more than teaching offered.	1
Better pay and greater degree of personal life.	1
Higher salaries elsewhere.	1
Better pay, employee benefits and retirement program.	1
More money, less responsibility, also less chance of being fired.	1
Make more money in other occupations.	1
Not teaching--more money in other occupations.	1
You spend too many hours a day at school and at night.	1
No teaching position offered me has been exactly what I wanted.	1
My personality is not suited to teaching, I am not a leader.	1
A person is always looking for advancement, I wouldn't say I plan to teach forever.	1
I never intended to teach.	1
If I have what I consider a good opportunity, I'll quit.	1

TABLE XIII (Continued)

REASONS GIVEN FOR LEAVING THE TEACHING PROFESSION

Comment	Frequency
Desire to enter business for myself.	1
Make a better living following a trade than teaching, less homework, less worry.	1
Frustrating, poorly paid.	1
Thought I needed experience in the industrial field.	1

Miscellaneous Considerations

Has the graduate since graduation decided to enter the teaching profession after choosing another occupation? One hundred and ninety-three did not answer, but this number accounts for graduates who are in the educational field at the present time. Thirty-two graduates, or 51.61 per cent, stated they plan to enter the teaching profession. Thirty graduates, or 46.77 per cent, of the graduates in other occupations said they did not plan to enter the educational field.

When asked if the graduates would return to college for a period of one year if granted a leave of absence, 97 graduates, or 41.27 per cent, indicated they would return; one hundred thirty-eight graduates, or 59.14 per cent, stated they would not return. However, when asked if they would return if paid partial salary, 187, or 79.55 per cent, said

they would return for a period of one year; forty-eight graduates, or 20.42 per cent, said they would not return to school.

When the graduates were asked if they planned to attend summer session of 1956 at Kansas State Teachers College, Pittsburg, twenty graduates were undecided, and fifty-five graduates indicated that they were planning to attend. The one hundred eighty-seven graduates who stated they did not plan to attend summer school may not return for such reasons as lack of work beyond the master's degree offered at Kansas State Teachers College, Pittsburg, summer employment, and various other reasons as several graduates indicated.

In this chapter the graduates' viewpoints and opinions were brought out in regard to courses which were most helpful, the question of the best minor for an industrial education major, and miscellaneous opinions relative to continuation in teaching.

Chapter V will deal with the recommendations and acknowledgements of the graduates.

CHAPTER V

RECOMMENDATIONS AND ACKNOWLEDGEMENTS BY GRADUATES

Opinions or suggestions have been offered by the graduates indicating what they believe would improve the Industrial Education and Art Department at Kansas State Teachers College, Pittsburg. Some of the comments presented here have suggestive value for those who like constructive criticism or new ideas on improvements.

Comments by the Graduates

There seems to be need for more courses pertaining to actual classroom experience, increased hours for industrial education majors, graduate courses in shop work, new instructors and instruction. Several graduates were of the opinion that the thesis and problem should be dropped and more practical work offered. Forty-two respondents gave no suggestions, and several indicated that the department was making an outstanding contribution. Table XIV, page 35, is composed of comments made by the respondents.

TABLE XIV

COMMENTS BY GRADUATES

Comment	Frequency
Do away with thesis and problem and have practical work.	33
More courses offered pertaining to actual classroom experiences and conditions.	32
Offer graduate courses in shop work.	31
Increase number of hours of a major in industrial arts to receive bachelor's degree.	26
Require a course in art and design.	23
Require maintenance problems of all industrial art majors	22
Improve the metalwork department.	21
Require more shop courses and less educational courses.	19
Put a library in the Industrial Arts Building for industrial arts students.	19
Build a new building with modern structure and interior.	12
More general shop program.	12
Offer courses above the masters in doctoral program.	11
More instructors within the department.	10
Organize and offer field trips to industrial art majors.	9
Offer more practical courses and less stress on teacher education.	9
Give more courses in design.	8
Offer graduate supervised teaching courses.	7
Select graduate students for advisors and give them experience	7
Offer a course in shop discipline.	7
A course in better understanding of the administrator problems	7
Air condition the drafting room.	6
Coordinate the Four-State Conference with the state teachers meetings.	5
Require a course in guidance.	5
Require a course in electricity for industrial art majors.	4
Offer a finance course pertaining to the shop.	4
Offer courses on new trends of shops and materials.	4
Offer courses on the use and maintenance of hand tools.	3
A course like methods of instruction on the under-graduate level.	3

TABLE XIV (Continued)

COMMENTS BY GRADUATES

Comment	Frequency
Require design of all planning to teach industrial arts.	3
Offer practice teaching under the conditions found in the school systems.	3
Provide adequate room for lecture.	3
Change summer session to two six-week sessions.	3
More extension courses (off campus) in teaching industrial arts courses.	3
Offer workshops as the education department has done.	3
Permit students to take more hours in industrial arts for the bachelor's degree.	3
Do away with a minor field for industrial arts majors.	3
Let the student choose his minor field or have no minor field in the graduate work.	3
Make industrial arts a part of general requirements, teaching handy-man skills and acquaintance of tools and processes.	3
Change trend of unit shop to general shop.	3
More general shops in crafts, plastics, <u>et cetera</u>	2
More areas of study, and not just in major field.	2
Practical projects design and construction course required with emphasis on design.	2
A better course in research methods.	2
More young instructors.	2
Train students to use better language and increase their own vocabulary.	2
Offer a graduate theory course in major fields of Industrial Arts Department.	2
Offer a course in public relations.	2
Offer a course in shop math within the department.	2
Offer a course in shop first-aid.	2
Offer a course in maintenance of smaller machines.	2
Offer more courses in the woodworking department.	2
Equip shops with new modern equipment.	2
Advertise the Industrial Arts Department.	2
Require more hours and courses for industrial arts majors.	2
Enroll education administrative majors in one industrial education course.	2
Require all educational majors to take a general shop course to broaden their field.	2

TABLE XIV (Continued)

COMMENTS BY GRADUATES

Comment	Frequency
I felt that the Industrial Education Department of Kansas State Teachers College of Pittsburg is making outstanding contributions to education in many ways, two of which are the Four-State Conference and the annual open house.	1
The department should be congratulated upon its forward-looking program and for the professional spirit of its staff members.	1
After five years away from Kansas State Teachers College I still think it is the best school for industrial arts.	1
I have attended several colleges and to my way of thinking Kansas State Teachers College, Pittsburg, has them all beat as far as instruction and methods are concerned.	1
My only regrets are that I am at the present financially unable to finish my master's degree.	1
My study convinced me that Kansas State Teachers College, Pittsburg, has one of the best industrial arts departments in the country, yet this is not stressed very actively by the administration of the college.	1
A large sign or billboard should be placed at each city limits to announce that the visitor is now entering Pittsburg, Kansas, the home of Kansas State Teachers College and advertisement of the expanding, advancement, and etc. (It should be taken up by the Industrial Arts Department as a project or drive.)	1
I went out in 1950 totally ignorant of how to teach shop. I was good in how to do the actual work myself but I didn't know one iota about how to teach it. I have learned a lot by experience, talking with fellow shop teachers, and attending industrial arts meetings.	1
When I was an undergraduate we did not have the block system, I think this has been a great improvement.	1
Professional courses outside of Industrial Education Department did not assist the writer in any material way.	1

TABLE XIV (Continued)

COMMENTS BY GRADUATES*

Comments	Frequency
Kansas State Teachers College is the best.	1
I find Kansas State Teachers College, Pittsburg, one of the best colleges. California has students who are inferior in ability, training and general attitude. I will take the Kansas student any time.	1
I feel that the Industrial Education Department at Kansas State Teachers College is the best in the country.	1

*Additional comments of graduates may be found in the Appendix.

Fields of Experience

Ninety-six per cent of the graduates indicated a need for more experience. One hundred seventy graduates, or 64.88 per cent, believed more experience should be given in the general shop area; one hundred forty-five graduates, or 55.34 per cent, stated more experience should be given in the technical aspects; and 34.35 per cent believed more experience should be given in the professional phase.

CHAPTER VI

SUMMARY

In reviewing the preceding chapters, several facts stand out above all the tables and statistics. The graduates are carrying through with their objectives, since 75.95 per cent are engaged in educational work of some type, and of these 54.58 per cent have made Kansas their home. Of the 15.03 per cent who did not plan to stay in the educational field, 72.5 per cent are leaving the profession because of low salaries. The average salary for a graduate of industrial education with a bachelor's degree was found to be \$3,785 and the master's degree salary was found to be somewhat higher. The average salary, while not the top salary, may give the graduate an incentive to stay in the profession; and, if the salaries being paid are any indication, there is likely to be an increase in the next few years. Seventy-two per cent had some type of trade or industrial experience; twenty-eight per cent had no such experience. Most of the graduates were active in their professional organizations as most of the respondents belong to two or more organizations; however, there were a few who belonged to none.

In the rating of courses taken by the graduates, Shop Organization and Management was chosen as being the most helpful of the undergraduate courses. Instructional Methods

in Industrial Education was rated as the most helpful of the graduate courses. The courses which seemed to be the most helpful in the area of general education were mathematics.

Several of the graduates commented concerning the fine job the Industrial Education and Art Department of the College was doing, a fact which speaks well for the Department and the College.

In view of the foregoing comments, some typical, selected recommendations may be advanced:

Selected Recommendations

1. Require more hours in industrial education major field and fewer education courses.
2. Establish a library within the department for the use of industrial education majors and minors.
3. Improve the metalwork curriculum.
4. Encourage industrial education majors and minors to take a maintenance course.
5. Delete the thesis and problem and substitute more shop work.
6. Offer more classes which will aid the prospective teacher in solving classroom problems.
7. Require a course in art and design.
8. Offer more experience in the general shop area.
9. Organize and offer more graduate courses in shop work.
10. Urge industrial education majors to choose mathematics for their minor field.

Recommendations for Further Studies

When a study such as this is made, many important problems are suggested that require additional research and investigation. Some of these problems are:

1. Problems confronting the beginning teacher of industrial education.

2. In-service follow-up of graduates to help them in their first teaching job.

3. Study of industrial arts teacher-certification requirements in the United States.

4. Annual follow-up studies of graduates of the Industrial Education and Art Department of the College for departmental and other improvements.

5. General shop vs. unit shop as sequences for industrial education major.

6. A follow-up study of the drop-outs in industrial education from 19__ to 19__.

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APPENDIX

WILLIAM R. SAUNDERS
2014 South Broadway
Pittsburg, Kansas

A STUDY OF GRADUATES FROM KANSAS STATE TEACHERS COLLEGE, PITTSBURG,
KANSAS, INDUSTRIAL EDUCATION DEPARTMENT FROM 1949 TO 1955

1. Name _____ Address _____
(optional) (optional)
2. Name of school or firm for which you work _____
3. Title of position _____
4. Undergraduate Major _____ Minor _____
5. Highest degree you hold _____ Date _____
(graduated)
6. Total years teaching experience _____
7. Total years industrial work or trade experience and kind

8. Do you teach in a school system having a regular salary
scale? Yes _____ No _____
9. Have salary increments been satisfactory? Yes _____ No _____
10. Member of what professional organizations _____

11. Are you at the present a full time graduate student?
Yes _____ No _____
12. If you are teaching do you plan to stay in the teaching
profession? Yes _____ No _____
13. If your answer to Number 12 is "No," would you give a
brief reason why you have chosen another occupation? _____

14. If you are not now teaching do you plan to enter the
teaching profession? Yes _____ No _____
15. If you were granted a leave of absence would you return
to school for a period of one year to do graduate work?
Yes _____ No _____
16. If you were paid a partial salary would you return to
school for a period of one year to do graduate work?
Yes _____ No _____
17. Do you plan to attend summer school of 1956 at Kansas
State Teachers College, Pittsburg, Kansas? Yes _____ No _____

COMMENTS AND REMARKS MAY BE PLACED ON BACK OF QUESTIONNAIRE

18. Please rate the following courses in terms of their helpfulness to you, 1 being first, 2 being second, 3 being third, and etc. Rate first five in each column.

UNDERGRADUATE COURSES

Art
 Leather-Tooling
 Drawing and Design
 Metalwork
 Photography
 Printing
 Woodwork
 Upholstery
 Finishing
 General Shop
 Welding
 Wood Technology
 Maintenance Problems
 Highway Safety and Drivers Ed.
 Intro. to Audio-Visual
 Teaching Aids
 Supervised Teaching
 Shop Organization and Management
 Methods of Teaching I. A.
 Others

GRADUATE COURSES

Course Construction
 Occupational Analysis
 School Shop Building, Planning and Shop Management
 Adult Program in Industrial Ed.
 General Shop
 Adv. Audio-Visual Problems
 Dev. of Modern American Industry
 Practicum in Industrial Education
 Research Methods
 Organization and Administration of Industrial Education
 Philosophy of Industrial Ed.
 Instructional Methods in I. E.
 History of Industrial Education
 Seminar in Industrial Education
 Tests and Measurements in I. E.
 Research and Thesis
 Research and Problem
 Others

19. What minor field would you suggest for an Industrial Education major?

20. Give three suggestions which you think would make for improvement in the Industrial Education and Art Department at KSTC.

1. _____

2. _____

3. _____

21. Name the top three general education courses which were most helpful to you.

1. _____

2. _____

3. _____

22. Do you believe that more experience should be given in
the general shop? _____; in technical aspects _____;
in professional phases _____; in others _____.

COMMENTS AND REMARKS MAY BE PLACED ON BACK OF QUESTIONNAIRE

2014 South Broadway
Pittsburg, Kansas
November 14, 1955

You graduated, according to the records at Kansas State Teachers College, Pittsburg, Kansas, between the years of 1949-1955. The experiences you have had, both as a student and since your graduation, places you in a position to provide some brief items of information that will be of value to the Industrial Education and Art Department of the College.

Approximately five minutes of your time is all that is necessary to complete the enclosed data sheet. Your views will be of considerable help to me. I would appreciate the completion and return of the information as soon as possible. A stamped, self-addressed envelope is enclosed.

Sincerely,

William (Bill) Saunders

Enclosure

2014 South Broadway
Pittsburg, Kansas
December 1, 1955

A questionnaire on the follow-up of graduates of Industrial Education from 1949 to 1955 was sent to you November 14, 1955. I realize that you received this in one of the busiest times of the year, but I am very anxious to have your viewpoints concerning this subject.

I am enclosing another copy of the questionnaire in case you have misplaced the other. Will you be kind enough to take just a few minutes and give me your comments? If at all possible, please return the questionnaire by December 31, 1955. You will find a stamped, self-addressed envelope enclosed.

Sincerely yours,

William (Bill) Saunders

Enclosure

ADDITIONAL COMMENTS OF GRADUATES WITH A FREQUENCY OF ONE

- More instructors of "Doc" Melton's caliber.
- More sincere artists, like Professor E. Larkin for example as instructors.
- Complete remodeling of Industrial Arts Building.
- Better lighting.
- Expand floor area in printing department.
- More individual storage space.
- Enlarge general shop areas, bench metal, plastics, leather and etc. to correspond with the metal and wood area.
- Trend toward general shop.
- Require general shop for each industrial arts major and minor.
- Emphasize or require more general shop courses.
- I think every male college student should have a course in general shop.
- Increase scholastic level and objectives of the department.
- Improve in social and speech skills of students.
- Improvement in professionalism of students.
- Teach students to be teachers and not craftsmen.
- Have student visitation to local school systems.
- Visit schools in operation.
- Strengthen department by requiring fewer general education courses.
- Require more hours for industrial arts majors and minors.
- Have no more than one minor field of fifteen hours.
- Have one minor in addition to major in industrial arts field.
- Give an Engineering degree.
- Give more practical ideas, not so much history of courses; not of interest to present day students.
- Give hour credit for every hour in class in all industrial arts classes.
- Give some of graduate courses as undergraduate courses.
- Give graduates an idea of what to expect out in the field.
- More practical work on graduate level.
- More realistic graduate program to allow students to work for own need and not to satisfy certain time-worn and obsolete standards.
- Plan "B" for masters, three papers.
- Permit promising graduate students to assist instructors who are overloaded and can't give individual instruction.
- Require two years teaching experience before granting the master's degree.
- I believe there should be more general hours in industrial education.
- A portion of a student's time should be spent training in industry or teaching in a particular school system.

ADDITIONAL COMMENTS OF GRADUATES WITH A FREQUENCY OF ONE
(Continued)

- Require six hours of supervised teaching.
- Specialize in one chosen field.
- Longer block for practice teaching.
- More stress on related material.
- More interest in your particular phase.
- Give practical idea for use in smaller shops.
- How to put on finish in your shop while others are working.
- More emphasis in modern techniques.
- More emphasis on creative and original.
- More instruction in T and I program.
- Make the student aware of what he is expected to know and prepare him to meet these problems.
- A better knowledge by the department toward the certification in Kansas and their own states.
- More emphasis on what to expect when you finish.
- Help more in placing after the student has finished.
- Industrial and all other occupational opportunities made available to the industrial education major.
- Periodic follow-up of graduates for suggestions.
- Have some course arranged at two different times in the summer so will not conflict.
- Offer or require more work in methods.
- Additional methods and techniques of teaching each industrial arts subject.
- We as teachers become stagnant in our methods of teaching at times; a refresher course in methods of teaching industrial arts would be helpful.
- All minors should be required to take Shop Organization and Management and Methods of Teaching I. A.
- Require more meetings between students and advisors.
- Require more math.
- Have trig as a requirement to graduate.
- Electricity added as a must to industrial arts.
- Introduction to an "Electronic Field."
- Require a course in History of Industrial Education to get Bachelor of Science degree in Industrial Education.
- At least three hours of metal work should be required.
- Require and give credit for part-time employment in student's major field.
- More education courses with teaching content.
- If problem is retained, the research course should be made more practical.
- Reorganize the research methods course.
- More emphasis on theory in metalwork.
- Improve the metal work curriculum.
- Make available all of the machines in the metal shop for those students taking metalwork.
- A better metal department.

ADDITIONAL COMMENTS OF GRADUATES WITH A FREQUENCY OF ONE
(Continued)

- Any guided instruction in the metalwork shop would be an improvement.
- An improvement in the physical aspects of the metal shop.
- Get a decent metalwork teacher.
- More aid in shop organization.
- More practical courses in the shop.
- Separate the Industrial Education and Art Department.
- Less departmental feuding.
- Better complete project work and including finishing.
- More stress given to teaching aids.
- More shop work and more freedom to design and construct not in a formal shop but in a shop equipped for experimental work.
- Get more teachers.
- More adequate counseling in the selection of subjects to meet requirement for graduation.
- Less subjects per semester and more time given to specialized courses.
- Have maintenance problems cover other fields instead of wood only.
- Each shop class have maintenance within content of the course.
- Spend more time in teaching use of tools, power and hand tools.
- Have an organized plastics department.
- Better drafting instruction and methods.
- College teachers should teach one year out of eight in public schools.
- Select older trained teachers for department.
- Employ teachers with public school experience.
- Create a depository where course material could be available, catalogued by fields.
- A course in how and where to purchase materials.
- Course in school or industrial art purchasing.
- Course in foremanship and supervision.
- Offer courses which would attract administrators.
- Course in knowledge of machines, makes, models for shop purposes.
- Have course offered in projects to be used in teaching aids.
- Although almost impossible, I would also be in favor of a course in carpentry.
- Offer a course in basic home repair so instructor could give student some general information.
- Offer a course in house building and repair.
- Seminar to discuss advancements by industry.
- Set up a program so students may solve problems that they meet in the teaching field, such as discipline problems and meeting needs of different communities.

ADDITIONAL COMMENTS OF GRADUATES WITH A FREQUENCY OF ONE
(Continued)

Offer courses of study on vocational level that will parallel industrial arts.

More crafts.

Offer a course, possibly on master's level, in which the student of industrial education gets actual practice in writing and submitting articles for magazine publication.

Four comments by the respondents were omitted because they had no value to the study.