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A Comparison of the Attitudes and Opinions of Industrial Arts Teachers with School Administrators Toward the Role of Industrial Arts Education in the Secondary School

Harold E. Vahling
Eastern Illinois University

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A COMPARISON OF THE ATTITUDES AND OPINIONS OF INDUSTRIAL
ARTS TEACHERS WITH SCHOOL ADMINISTRATORS TOWARD THE ROLE

OF INDUSTRIAL ARTS EDUCATION IN THE SECONCARY SCHOOL

(TITLE)

BY

Harold E. Vahling

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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CHARLESTON, ILLINOIS

1969

YEAR

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	iv
LIST OF ILLUSTRATIONS	vi
 Chapter	
I. INTRODUCTION	1
Statement of Problem	
Purpose of Study	
Limitations of Study	
Definitions of Terms	
II. REVIEW OF LITERATURE	7
III. PROCEDURE OF STUDY	10
Design of Instrument	
Collection of Data	
IV. EVALUATION OF DATA	15
General Information	
Evaluation of Objectives	
Emphasis Placed on Objectives	
Influencing Factors	
General Opinion Questions	
Desirable Elements	
V. CONCLUSIONS	35
Summary	
Implications	
VI. SUGGESTIONS FOR FURTHER STUDY	39
APPENDIX A	40
APPENDIX B	41
BIBLIOGRAPHY	42

LIST OF TABLES

Table	Page
1. Percent of Survey Forms Returned by Industrial Arts Teachers and School Administrators According to Number of Forms Sent	11
2. Percent of Total Forms Returned by Industrial Arts Teachers and School Administrators According to School Size and Educational Degree	12
3. Percent of Total Forms Returned by Industrial Arts Teachers and School Administrators According to Type of School Organization . .	13
4. Mean Number of Industrial Arts Students and Teachers in Public Secondary Schools, by Enrollment Size	16
5. Percent of Public Schools Requiring Industrial Arts for Students, by Grade Level According to Figures Obtained from Teacher Survey Forms	17
6. Suggested Objectives of Industrial Arts As Evaluated by Public Secondary School Administrators, and Ranked According to Percent Believing Each Objective Rated Excellent . .	19
7. Suggested Objectives of Industrial Arts As Evaluated by Industrial Arts Teachers, and Ranked According to Percent Believing Each Objective Rated Excellent	20
8. Suggested Objectives of Industrial Arts Rated by School Administrators According to Degree of Emphasis, and Ranked According to Percent Believing Each Objective Rated High.	23
9. Suggested Objectives of Industrial Arts Rated by Industrial Arts Teachers According to Degree of Emphasis, and Ranked According to Percent Believing Each Objective Rated High	24

LIST OF TABLES--Continued

Table	Page
10. Mean Degree of Evaluation and Emphasis Placed by Industrial Arts Teachers and Administrators on Various Suggested Objectives of Industrial Arts	25
11. Percent of Tabulated Factors of Industrial Arts, by Industrial Arts Teachers and School Administrators	29
12. Percent of Tabulated Results of General Opinion Questions, by Industrial Arts Teachers and School Administrators	30
13. Mean Degree of Evaluation Placed by Industrial Arts Teachers and Secondary School Administrators on Various Suggested Elements of A Good Industrial Arts Program As They Related to Their Situation	33
14. Suggested Elements of An Industrial Arts Program As Ranked by Participant Groups, in Descending Order	34

LIST OF ILLUSTRATIONS

Figure	Page
1. Percent of Survey Forms Returned from Industrial Arts Teachers and School Administrators According to The Type of Community Which The School Serves	13
2. Percent of Public Secondary Schools Offering Industrial Arts Courses per School by Subject Area	17

CHAPTER I

INTRODUCTION

Statement of Problem

A publication of the American Industrial Arts Association states, "Industrial arts . . . should be a part of the learning experiences of all students at all levels of grade and ability, in order that they may understand and learn to control their industrial-technological environment."¹

In 1953, the Committee on Course of Study and Curriculum of the High School Principals Association recommended:

In view of the inherent values of this area of education to all future citizens, we recommend that as soon as possible, sufficient facilities be provided to permit all students (boys and girls) to take at least one unit in industrial and practical arts.²

Associate Professor Richard D. Kain, chairman of the Ohio Northern University Department of Industrial Arts, writes of two current problems of American education. The two educational problems cited by Professor Kain were the dropout of nearly a million students from high school each

¹"This We Believe," American Industrial Arts Association, Inc., Washington, D.C.

²Herbert Siegel, "The Imperatives of the High School Industrial Arts Program," Industrial Arts and Vocational Education (May, 1964), p. 35.

year and the critical shortage of industrial arts teachers.³

Referring to the million dropouts a year, Professor Kain said that a well-organized industrial arts program can assist in introducing this potential wage earner to the industrial world he is so anxious to enter and provide him with an incentive he cannot find in the more "academic" courses.

Many people fail to realize that industrial arts teachers as a group receive more money on the average than any other teaching group. . . . The state industrial arts association and various industrial arts professional groups throughout the nation are making an effort to have these facts better known and to suggest to high school officials that students with good academic records be channeled into the industrial arts teaching field.⁴

During the past year John L. Feirer, prominent author and administrator in industrial arts education, headed an industrial arts evaluation team in a southern state. The findings reported by Feirer and his group indicated that one-third of the high school principals visited had a negative or uninterested attitude towards industrial arts.⁵ No comments were given as to why the principals voiced a negative attitude.

A survey was conducted by the Industrial Arts and Vocational Education magazine staff entitled "High School Industrial Arts Teacher's Problems."⁶ One of the ten

³News Department, "Two Problems of American Education," Industrial Arts and Vocational Education (December, 1963), p. 4.

⁴Ibid.

⁵John L. Feirer, "A Reply," Industrial Arts and Vocational Education (March, 1968), p. 28.

⁶Industrial Arts and Vocational Education Staff, "High School Industrial Arts Teachers' Problems," Industrial Arts and Vocational Education (September, 1967), p. 31.

possible classroom problems listed is related to this report. The survey report stated administration does not understand purpose of industrial arts. Fifty-five percent of those industrial arts teachers responding to the statement indicated this was a problem.

A superintendent of schools in Texas recently stated the following:

I seriously regret that I have never had an industrial course and have no real hobby or leisure-time activity. I know of no other area of our educational curricula which can help educate all youngsters from the mentally retarded to the mentally talented . . . no other area which, if taught decently, meets our overall educational objectives any better--to train nearly all people in real physical and mental skills.⁷

The operation of an industrial arts program, to some degree, is limited by the amount of available funds. Certain portions of the industrial arts program for the 1968-1969 school year were dropped in Decatur, Danville, and Kankakee, Illinois, in an effort to curtail spending. "In many instances lay people, administrators, and others still have a lack of understanding of our goals and purposes."⁸ Only recently have federal funds been made available for industrial arts. The amended Higher Education Act, Title XI, passed by the Eighty-ninth

⁷Everett R. Glazener, "What Challenge Is There for Making Industrial Arts a Program for Trying Out Ideas, for Testing Skills, and For Using Knowledge in a Variety of Ways?" Developing Human Potential through Industrial Arts, Addresses and Proceedings of the 27th Annual Convention of the American Industrial Arts Association (Tulsa, 1965), p. 78.

⁸Ibid.

Congress, provides funds for industrial arts instructional materials and facilities.⁹

The Sixteenth Yearbook of the American Council of Industrial Arts Teacher Education entitled Evaluation Guidelines for Contemporary Industrial Arts Programs views the principal as an evaluator of the industrial arts program. It stated:

The administrative duties of the principal should include his acting in an advisory role in the evaluation of the industrial arts program. From an administrator's vantage point, he might be able to compare the educational growth of students in industrial arts classes with student growth in other areas of the total school program. In the role of an evaluator, the principal would be qualified to measure the extent of integration of curricular areas and to observe the interdepartmental use of equipment by the students. In his administrative function, he would be able to support the teacher in effecting a long-range plan for repair and replacement of instructional equipment.¹⁰

It appears that the administrator plays a key role in both the development and the evaluation of an industrial arts program.

Purpose of Study

The purpose of this study was to ascertain:

1. The relationship between industrial arts teachers and secondary school administrators in regard to the evaluation of suggested objectives of industrial arts education.

⁹Lloyd P. Nelson and William T. Sargent, Evaluation Guidelines for Contemporary Industrial Arts Programs, Sixteenth yearbook of the American Council of Industrial Arts Teacher Education, (Bloomington, Ill.: McKnight & McKnight Publishing Company, 1967), p. 16.

¹⁰Ibid., p. 109.

2. The attitude of industrial arts teachers and secondary school administrators toward selected objectives.
3. The attitudes of industrial arts teachers and secondary school administrators toward federal aid, work experience for teachers, the image of industrial arts, teacher preparation, offering industrial arts to girls, industrial arts as pre-vocational training, the low achiever, and the possibility of industrial arts being discouraged by some guidance personnel.
4. How industrial arts teachers and secondary school administrators evaluate the present industrial arts program in the secondary school.

Limitations of Study

This study was controlled by the extent to which the actual responses of the teachers and administrative participants could be successfully measured through the use of an information form. This study was limited to:

1. Public secondary schools in East Central Illinois offering industrial arts education.
2. Industrial arts teachers within the survey area.
3. Secondary school administrators within the survey area.

The geographical area encompasses twenty-one counties with a North-South distance of 140 miles and an East-West distance of 95 miles with Mattoon, Illinois, being approximately in the center. This area approximates 13,300 square miles. The 1967-1968 Industrial Arts Teacher Directory and the 1967-1968 Directory Illinois Schools, both published by the Office of the Superintendent of Public Instruction, Springfield, Illinois, were used to obtain mailing addresses.

The previously mentioned geographical area covered by this survey was selected on the following basis:

1. It includes Round Tables 13, 16, 21, the South geographical half of 12, and the North geographical half of 18. This type of classification was used to determine schools offering industrial arts.
2. It includes the industrial areas of Decatur, Champaign, and Danville to counterbalance the agrarian communities.
3. It includes schools of various enrollment and industrial arts department sizes.

Definitions of Terms

The following definitions refer only to this study:

Secondary School: A public school offering industrial arts education which includes grades nine, ten, eleven, and twelve.

Administrator: A principal or superintendent of a public secondary school.

Teacher: An industrial arts teacher or supervisor.

Industrial Arts Education: The total offering of an educational program in grades nine through twelve which is concerned with providing youth an opportunity to: (a) plan, (b) use tools and materials in constructing articles, (c) perform processes of industry, (d) explore their industrial environment, (e) develop an understanding of and appreciation for industrial materials, processes, and products.

CHAPTER II

REVIEW OF LITERATURE

There have been only a few advanced studies conducted which have compared the attitudes and opinions of industrial arts teachers with school administrators toward the role of industrial arts education in the secondary school. In reviewing these studies, only those relating portions were noted.

In two survey questions the author attempted to ascertain whether the participants thought it was necessary for industrial arts teachers to have industrial-work experience. A doctoral dissertation from the University of Missouri, "Relation of Work Experience in Industry to Industrial Arts Teaching Practices and Success" stated:

The purpose of the study was to ascertain the relationship of work experience in industry to teaching practices and rated success in teaching by industrial arts teachers.

There seems to be little or no relationship between whether or not industrial arts teachers have work experience in industry and the teaching practices followed; and the teaching success ratings given by industrial arts supervisors.¹¹

¹¹Raymond Van Tassel, Editor, Research in Industrial Arts Education: Ninth Yearbook of the American Council on Industrial Arts Teacher Education, (Bloomington, Illinois: McKnight & McKnight Publishing Company, 1960), p. 14.

Parts three and four of the survey instrument pertain to the evaluation and amount of emphasis placed on various suggested objectives of industrial arts education. The following is a resume of two studies concerning industrial arts objectives:

John Hawse (1964) studied the amount of agreement held by industrial arts leaders in Illinois, industrial arts teachers, administrators, industrial employment officers and parents from Lake County, Illinois as to the relative importance of the nine industrial arts objectives published by the AVA in 1953.

Hawse found in analyzing these data that there was agreement in opinion among the five population groups used in the study. All groups rated Objective 2 (Appreciation and Use) as "desirable," and the following five as "very important": Objective 3 (Self-rationalization and Initiative), Objective 4 (Cooperative Attitudes), Objective 5 (Health and Safety), Objective 6 (Interest in Achievement), and Objective 7 (Orderly Performance). . . . The author concluded, from the findings of his study, that there is basic agreement on the value of the industrial arts objectives subscribed to by industrial arts teachers.¹²

The U.S. Office of Education recently published the results of a nation-wide survey entitled, Industrial Arts Education, a Survey of Programs, Teachers, Students, and Curriculum.¹³ A portion of this comprehensive survey dealt with the purposes or objectives given for industrial arts. Both principals and industrial arts teachers were asked to evaluate ten selected purposes of industrial arts.

¹²John D. Rowelett, Editor, Status of Research In Industrial Arts: Fifteenth Yearbook of the American Council on Industrial Arts Teacher Education, (Bloomington, Illinois: McKnight & McKnight Publishing Company, 1966), p. 25.

¹³Schmitt and Pelley. "Charting New Directions in Industrial Arts," School Shop, (October, 1967), p. 45.

Of the 10 purposes of industrial arts identified on the survey forms, the following four ranked highest in the degree of emphasis placed on them by both industrial arts teachers and principals:

1. To develop in each student a measure of skill in use of common tools and machines.
2. To discover and to develop creative technical talents in students.
3. To provide general all-round technical knowledge and skills.
4. To develop problem-solving skills relating to materials and processes.

The objective of developing an understanding of our technical culture ranked relatively high among teachers but relatively low among principals. The reverse was true regarding the purpose of developing worthy leisure time interests.¹⁴

¹⁴Ibid.

CHAPTER III

PROCEDURE OF STUDY

Design of Instrument

The physical scope of this survey prohibited personal consultations with each respondent. An information form was devised to secure data for the study. It was printed on two different colors of paper in order to distinguish teacher and administrative respondents. The white form was completed by industrial arts teachers (see appendix A). The yellow form by secondary school administrators (see appendix B).

The forms were prepared from the following sources:

(1) the American Industrial Arts Association, (2) the American Council of Industrial Arts Teacher Education, (3) discussions with industrial arts teachers and school administrators, and (4) professional magazines such as School Shop and Industrial Arts and Vocational Education.

Collection of Data

The information forms were mailed directly to the participants. No pilot program was conducted to test the form's effectiveness in securing the requested data. Survey forms were sent to 203 industrial arts teachers and 112 secondary school administrators. Fifty-nine percent of the survey forms had been returned by the following week.

Table 1 shows the percent of survey forms returned by teachers and administrators. The participants completed and

TABLE 1

PERCENT OF SURVEY FORMS RETURNED BY INDUSTRIAL ARTS TEACHERS AND SCHOOL ADMINISTRATORS ACCORDING TO NUMBER OF FORMS SENT

PARTICIPANT	Number of forms Sent	Number of forms Returned	Per- cent
Ind. Arts Teachers	203	142	70
Administrators	112	57	51
Total	315	199	63

returned 199 or, 63 percent of the forms. According to the number of forms sent to each participating group, the teachers returned 142 or 70 percent of their forms. The administrators returned 57 forms or, 51 percent of the forms sent.

Schools with an enrollment of less than 500 students constituted 60 percent of the administrative forms, and only 35 percent of the teacher forms. The greatest percentage of teacher forms according to school size, came from schools with an enrollment between 500 and 749 students. Table 2 also shows the number of forms returned by teachers according to educational degree and school size. The ratio between teachers with a Bachelor's degree and those with a Master's degree increases with school size, with the latter being more prominent in the larger schools. Of the teacher participants, 64 percent had a Master's degree. The various school sizes shown in Table 2 were selected in order to obtain a

suitable distribution of respondents.

TABLE 2

PERCENT OF TOTAL FORMS RETURNED BY INDUSTRIAL ARTS
TEACHERS AND SCHOOL ADMINISTRATORS ACCORDING
TO SCHOOL SIZE AND EDUCATIONAL DEGREE

School Size (Enrollment)	Percent of forms returned		
	Teachers-B.A.	Teachers-M.A.	Administrators
149-Under	4	1	12
150-299	6	8	30
300-499	8	8	18
500-749	7	13	14
750-999	3	10	9
1000-1249	3	12	5
1250-1499	2	5	5
1500-Over	3	7	7
Total	36	64	100

Table 3 shows the detailed response of participants according to type of school organization. It shows the total response of administrators as being 86 percent. This figure resulted from the fact that some administrators failed to indicate their type of school organization. No allocations or imputations were made where an entry for a given item was missing. The number of item nonresponses for the different categories is shown in the more selected tables throughout this report.

The majority of respondents were from a four-year

high school including grades 9 through 12 (see Table 3). The 7-12 type of school organization was the most uncommon which accounted for only 6 percent of the respondents.

TABLE 3

PERCENT OF TOTAL FORMS RETURNED BY INDUSTRIAL ARTS TEACHERS AND SCHOOL ADMINISTRATORS ACCORDING TO TYPE OF SCHOOL ORGANIZATION

School Organization (Grade Level)	Percent of Usable Forms	
	Industrial Arts Teachers	Administrators
7-8	17	5
6-8 or 7-9	18	15
10-12	15	5
9-12	49	56
7-12	1	5
Total	100%	86%

The type of community surveyed was predominately agrarian. Figure 1 shows the percentage of information forms returned by respondents according to the type of

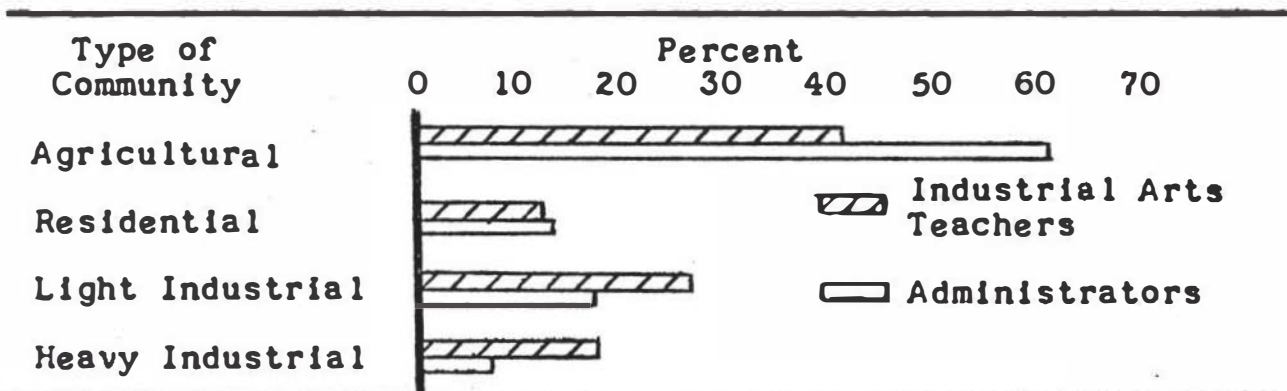


Figure 1.--Percent of survey forms returned from industrial arts teachers and school administrators according to type of community which the school serves.

community the school serves. More administrators than teachers indicated that the community was agricultural. The number of survey forms returned from industrial areas constituted 45 percent of the teacher forms and only 25 percent of the administrative forms.

CHAPTER IV

EVALUATION OF DATA

General Information

The general information presented here relates to the number of students taking industrial arts, the number of industrial arts teachers, courses offered in industrial arts, and industrial arts as a required subject.

The mean number of industrial arts students and teachers per school, according to enrollment size is shown in Table 4. Schools with an enrollment between 500 and 749 students had a higher mean enrollment of industrial arts students than did schools with an enrollment between 750 and 999 students. The mean number of industrial arts students varied from 30 students in schools with an enrollment of less than 149, to 555 students in schools with an enrollment of 1500 or more.

The industrial arts student-teacher ratio was not as readily determined by school size as was the number of industrial arts students and teachers. Schools with an enrollment between 500 and 749 students had the highest combined average of 103 industrial arts students per teacher. There were 86 industrial arts students per teacher in schools with an enrollment between 1250 and 1499 and only 74 industrial arts students per teacher in

schools with an enrollment of 1500 or more.

TABLE 4

MEAN NUMBER OF INDUSTRIAL ARTS STUDENTS AND TEACHERS
IN PUBLIC SECONDARY SCHOOLS, BY ENROLLMENT SIZE

Enrollment Size	Mean Number of Industrial Arts Students		Mean Number of Industrial Arts Teachers
	Per School	Per Teacher	Per School
149-Under	30	30	1
150-299	57	57	1
300-499	96	64	1.5
500-749	186	103	1.8
750-999	163	81	2
1000-1249	207	69	3
1250-1499	343	86	4
1500-Over	555	74	7.5

Various subject areas usually associated with industrial arts education are listed in Figure 2 along with the percentage of schools offering a particular subject. Of the eight subject areas listed only two, drafting and woodworking were offered by all participating schools. Metalworking was taught in 99 percent of the schools and electricity-electronics in 88 percent of the schools. These were followed by power mechanics with 43 percent, graphic arts with 41 percent, and crafts with 20 percent. Other subject areas listed by participants were building trades, housing, welding, production methods, manufacturing, cabinet making,

and occupations.

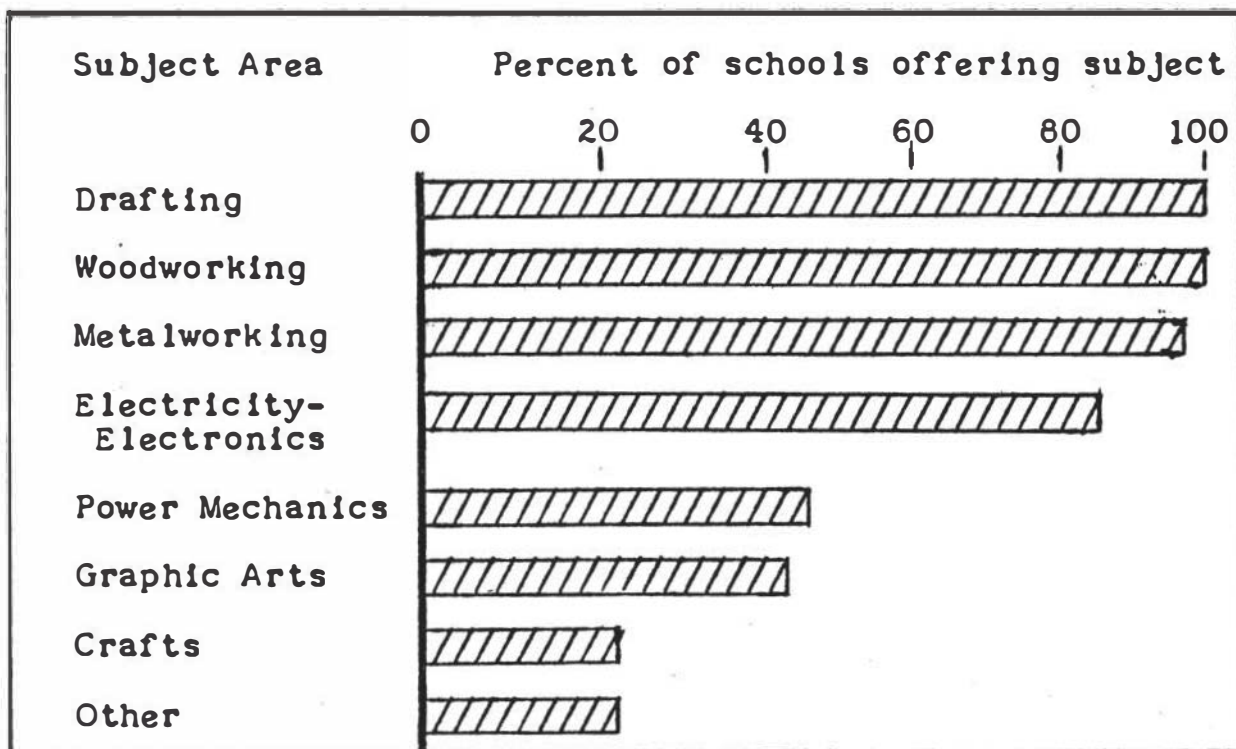


Figure 2.--Percent of public secondary schools offering industrial arts courses per school by subject area.

The number and percent of respondents in schools requiring industrial arts education is shown in Table 5.

TABLE 5

PERCENT OF PUBLIC SCHOOLS REQUIRING INDUSTRIAL ARTS FOR STUDENTS, BY GRADE LEVEL ACCORDING TO FIGURES OBTAINED FROM TEACHER SURVEY FORMS

Grade Level	Number of Schools Requiring Industrial Arts	Percent
Grade 7	47	33
Grade 8	49	34
Grade 9	6	4

The percentage given for each grade level in Table 5 represents all teacher respondents regardless of their type of school organization. Table 5 shows that 47 out of 142 respondents or 33 percent indicated that industrial arts was a required subject in grade seven. Six teachers or 4 percent indicated that industrial arts was required in grade nine. Industrial arts was not required in grades ten, eleven, and twelve.

Evaluation of Objectives

Both industrial arts teachers and secondary school administrators were asked to evaluate ten suggested objectives of industrial arts education. The purpose of this evaluation was to determine: (1) the objective rating, (2) the amount of agreement between teachers and administrators, and (3) the similarity between participants evaluation and the degree of emphasis placed on each objective.

Table 6 lists the suggested objectives of industrial arts as evaluated by administrators, and ranked according to the percent believing each objective rated excellent. To develop desirable attitudes and practices with respect to health and safety was the only objective to receive an excellent rating by school administrators. The objective, to develop consumer knowledge and appreciation in the use of industrial products received the lowest percent rating. All other objectives were rated as good.

Table 7 compares the objectives as evaluated by

TABLE 6

SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS AS EVALUATED BY PUBLIC SECONDARY SCHOOL ADMINISTRATORS, AND RANKED ACCORDING TO PERCENT BELIEVING EACH OBJECTIVE RATED EXCELLENT

Rank	Suggested Objective	Exc.	Percent			Nonresponse
			Good	Fair	Poor	
1.	To develop desirable attitudes and practices with respect to health and safety.....	58	32	7	0	3
2.	To develop a relative measure of skill in the use of tools and machines.....	46	49	3	0	2
3.	To develop desirable social attitudes and work habits.....	47	46	7	0	0
4.	To provide pre-vocational training for students who would not otherwise have this opportunity.....	44	35	15	4	2
5.	To develop problem-solving skills related to industrial materials and processes.....	37	46	16	0	1
6.	To develop an interest in industry and an understanding of its place in our culture.....	30	54	16	0	0
7.	To develop worthy leisure-time interests.....	35	40	25	0	0
8.	To develop skills in the production and use of sketches, schematics, diagrams, graphs, and drawings.....	23	55	19	2	1
9.	To ascertain and develop the talents of students in technical fields and applied science.....	26	51	16	5	2
10.	To develop consumer knowledge and appreciation in the use of industrial products.....	25	47	28	0	0

TABLE 7

SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS AS EVALUATED BY INDUSTRIAL ARTS TEACHERS, AND RANKED ACCORDING TO PERCENT BELIEVING EACH OBJECTIVE RATED EXCELLENT

Rank	Suggested Objective	Percent				Nonre- sponse
		Exc.	Good	Fair	Poor	
1.	To develop desirable social attitudes and work habits.....	50	42	6	2	0
2.	To develop desirable attitudes and practices with respect to health and safety.....	50	35	13	2	0
3.	To develop an interest in industry and an understanding of its place in our culture.....	47	39	10	4	0
4.	To develop a relative measure of skill in the use of tools and machines.....	37	44	9	2	8
5.	To develop consumer knowledge and appreciation in the use of industrial products.....	37	44	16	3	0
6.	To develop problem-solving skills related to industrial materials and processes.....	36	38	23	3	0
7.	To provide pre-vocational training for students who would not otherwise have this opportunity.....	38	35	21	5	1
8.	To develop worthy leisure-time interests.....	33	39	27	1	0
9.	To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.....	29	47	20	4	0
10.	To ascertain and develop the talents of students in technical fields and applied science.....	14	35	44	7	0

industrial arts teachers. The objective, to develop desirable social attitudes and work habits received the highest rating by teachers. To ascertain and develop the talents of students in technical fields and applied science was the only objective to receive a fair rating. All other objectives were rated as good.

After reviewing the information presented in Tables 6 and 7 it appears that the following assumptions can be drawn. There appears to be general agreement between teachers and administrators as to the evaluation of five industrial arts objectives. These were:

1. To develop problem-solving skills related to industrial materials and processes.
2. To ascertain and develop the talents of students in technical fields and applied science.
3. To develop worthy leisure-time interests.
4. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.
5. To develop desirable attitudes and practices with respect to health and safety.

There was minor disagreement on four objectives, with differences ranging from two to three ranks in standing. These were:

1. To develop an interest in industry and an understanding of its place in our culture.
2. To develop a relative measure of skill in the use of tools and machines.
3. To develop desirable social attitudes and work habits.
4. To provide pre-vocational training for students who would not otherwise have this opportunity.

The greatest margin of disagreement was on the objective to develop consumer knowledge and appreciation in the use of industrial products. This objective was ranked fifth by teachers and tenth by administrators.

Emphasis Placed on Objectives

The purpose of this section was to ascertain the degree of emphasis placed on various objectives of industrial arts by both teachers and administrators. This information should give some indication as to the validity of the responses based on the assumption that an objective which receives a high evaluation should also receive a high degree of emphasis.

Table 8 shows the degree of emphasis placed on each of the suggested objectives of industrial arts, by school administrators. By comparing Table 8 with Table 6, one will note that the percent ratings listed for each objective was slightly higher in Table 8. The greatest mean degree difference was .29 figured on the basis of four being maximum (see Table 10).

The following three objectives received a high emphasis rating by school administrators.

1. To develop desirable attitudes and practices with respect to health and safety.
2. To develop desirable social attitudes and work habits.
3. To develop a relative measure of skill in the use of tools and machines.

The degree of emphasis placed on each objective by

TABLE 8

SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS RATED BY SCHOOL ADMINISTRATORS ACCORDING TO DEGREE OF EMPHASIS, AND RANKED ACCORDING TO PERCENT BELIEVING EACH OBJECTIVE RATED HIGH

Rank	Suggested Objective	Percent				Nonre- sponse
		High	Med.	Low	None	
1.	To develop desirable attitudes and practices with respect to health and safety.....	65	32	2	0	1
2.	To develop desirable social attitudes and work habits.....	61	37	2	0	0
3.	To develop a relative measure of skill in the use of tools and machines.....	53	47	0	0	0
4.	To provide pre-vocational training for students who would not otherwise have this opportunity.....	58	37	5	0	0
5.	To develop worthy leisure-time interests.....	44	44	12	0	0
6.	To develop problem-solving skills related to industrial materials and processes.....	35	60	5	0	0
7.	To ascertain and develop the talents of students in technical fields and applied science.....	32	54	14	0	0
8.	To develop an interest in industry and an understanding of its place in our culture.....	30	60	9	1	0
9.	To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.....	28	56	16	0	0
10.	To develop consumer knowledge and appreciation in the use of industrial products.....	25	61	14	0	0

TABLE 9

SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS RATED BY INDUSTRIAL ARTS TEACHERS ACCORDING TO DEGREE OF EMPHASIS, AND RANKED ACCORDING TO PERCENT BELIEVING EACH OBJECTIVE RATED HIGH

Rank	Suggested Objective	Percent				Nonre- sponse
		High	Med.	Low	None	
1.	To develop desirable social attitudes and work habits.....	69	22	8	0	1
2.	To develop desirable attitudes and practices with respect to health and safety.....	67	27	5	0	1
3.	To develop problem-solving skills related to industrial materials and processes.....	64	25	11	0	0
4.	To develop a relative measure of skill in the use of tools and machines.....	48	47	5	0	0
5.	To develop an interest in industry and an understanding of its place in our culture.....	52	38	8	2	0
6.	To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.....	46	45	7	1	1
7.	To develop consumer knowledge and appreciation in the use of industrial products.....	45	41	12	0	2
8.	To provide pre-vocational training for students who would not otherwise have this opportunity.....	44	39	13	4	0
9.	To develop worthy leisure-time interests.....	36	47	14	2	1
10.	To ascertain and develop the talents of students in technical fields and applied science.....	20	53	22	3	2

TABLE 10

MEAN DEGREE OF EVALUATION AND EMPHASIS PLACED BY INDUSTRIAL ARTS TEACHERS AND ADMINISTRATORS ON VARIOUS SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS*

Objective	Teachers					Administrators				
	Evaluation	Emphasis	Mean Differ- ence	Evaluation	Emphasis	Evaluation	Emphasis	Mean Differ- ence	Evaluation	Emphasis
	Mean Rank	Mean Rank		Mean Rank	Mean Rank	Mean Rank	Mean Rank			
1. To develop desirable social attitudes and work habits..	3.42	1	3.62	1	.20	3.40	3	3.57	2	.17
2. To develop desirable attitudes and practices with respect to health and safety.....	3.33	2	3.62	2	.29	3.70	1	3.71	1	.01
3. To develop problem-solving skills related to industrial materials and processes.....	3.11	6	3.53	3	.42	3.21	5	3.29	6	.08
4. To develop a relative measure of skill in the use of tools and machines..	3.25	4	3.42	4	.17	3.46	2	3.52	3	.06
5. To develop an interest in industry and an understanding of its place in our culture.....	3.30	3	3.41	5	.11	3.12	6	3.17	8	.05
6. To develop skills in the production and use of sketches, schematics, graphs diagrams, and drawings.....	3.00	9	3.38	6	.38	3.00	8	3.12	9	.12

TABLE 10--Continued

MEAN DEGREE OF EVALUATION AND EMPHASIS PLACED BY INDUSTRIAL ARTS TEACHERS AND ADMINISTRATORS ON VARIOUS SUGGESTED OBJECTIVES OF INDUSTRIAL ARTS

Objective	Teachers					Administrators				
	Evaluation		Emphasis		Mean Differ- ence	Evaluation		Emphasis		Mean Differ- ence
	Mean Rank	Rank	Mean Rank	Rank		Mean Rank	Rank	Mean Rank	Rank	
7. To develop consumer knowledge and appreciation in the use of industrial products.....	3.14	5	3.33	7	.19	2.96	10	3.10	10	.14
8. To provide pre-vocational training for students who would not otherwise have this opportunity.....	3.07	7	3.24	8	.17	3.23	4	3.52	4	.29
9. To develop worthy leisure time interests.....	3.03	8	3.18	9	.15	3.08	7	3.31	5	.23
10. To ascertain and develop the talents of students in technical fields and applied science.....	2.54	10	2.92	10	.38	3.00	9	3.17	7	.17

* Key to table:

Mean evaluation: 4-excellent; 3-good; 2-fair; 1-poor.

Mean emphasis: 4-high; 3-medium; 2-low; 1-none.

Mean difference: Difference between mean evaluation and emphasis.

Rank: Numbers indicate objective rank; 1-high; 10-low.

industrial arts teachers is shown in Table 9. The percent rating listed for each objective was somewhat higher in Table 9 as compared to Table 7. The greatest mean degree of difference between objective evaluation and emphasis was .42, the smallest was .11 (see Table 10).

The following objectives received a high emphasis rating by industrial arts teachers.

1. To develop desirable social attitudes and work habits.
2. To develop desirable attitudes and practices with respect to health and safety.
3. To develop problem-solving skills related to industrial materials and processes.

To ascertain and develop the talents of students in technical fields and applied science was the only objective to receive a mean degree rating of less than three (see Table 10). Teachers placed a medium degree of emphasis on the remaining six objectives as indicated in Table 10.

The degree of emphasis placed on each objective by both teachers and administrators indicates there was agreement on three objectives. They were:

1. To develop a relative measure of skill in the use of tools and machines.
2. To develop desirable social attitudes and work habits.
3. To develop desirable attitudes and practices with respect to health and safety.

There was some disagreement on the remaining seven objectives, with differences ranging from three to four ranks in standing (see Table 10). For example, the objective

to develop worthy leisure-time interests was ranked fifth by administrators and ninth by teachers. The reverse was true of the following two objectives which were ranked considerably higher by teachers than administrators.

They were: (1) to develop problem-solving skills related to industrial materials and processes, and (2) to develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.

Influencing Factors

The influencing factors are those which the author believes, to some degree, could greatly influence the direction of industrial arts education. These factors are listed in Table 11 along with the percent of yes and no responses given by teachers and administrators. It can be stated that the majority of teachers and administrative respondents believe that (1) the American Industrial Arts Association should recommend standards for teacher preparation and certification, (2) that teachers should work frequently in industry, (3) that teachers should have industrial experience in the area they teach, and (4) that Congress should appropriate additional federal aid for industrial arts education.

General Opinion Questions

The purpose of this section was to ascertain the opinion held by the majority of industrial arts teachers and school administrators regarding the eleven general opinion

TABLE 11

PERCENT OF TABULATED FACTORS OF INDUSTRIAL ARTS, BY
INDUSTRIAL ARTS TEACHERS AND SCHOOL ADMINISTRATORS

Influencing Factors	Percent					
	Industrial Arts Teachers			Administrators		
	Yes	No	Nonre- sponse	Yes	No	Nonre- sponse
1. For the American Industrial Arts Association to recommend standards for teacher preparation and certification.....	66	33	1	69	30	1
2. For industrial arts teachers to work frequently in industry in order to promote a curriculum which is industry-oriented.....	80	20	0	63	33	4
3. For industrial arts teachers to have industrial experience in the area they teach in order to be competent.....	63	37	0	60	39	1
4. For Congress to appropriate more federal aid for industrial arts with less red tape.....	73	25	2	67	28	5

questions listed in Table 12. The highest response given by both participant groups involves the college bound student. Table 12 shows that 95 percent of the teachers and 92 percent of the administrators indicated that the college bound student should be encouraged to take courses in industrial arts which relate to his area of study. Other areas receiving the majority support from both participant groups were as follows: (1) industrial arts should be offered by all secondary schools, (2) some courses should be structured toward avocational values, (3) students should pay for supplies used in the laboratory, and (4)

TABLE 12

PERCENT OF TABULATED RESULTS OF GENERAL OPINION QUESTIONS,
BY INDUSTRIAL ARTS TEACHERS AND SCHOOL ADMINISTRATORS

General Opinion Questions	Percent					
	Industrial Arts Teachers			Administrators		
	Yes	No	Nonre- sponse	Yes	No	Nonre- sponse
1. That more emphasis should be placed on teaching the concepts of industry rather than the making of useful projects.....	69	29	2	51	46	1
2. That the general public has a poor image of industrial arts education.	68	29	3	51	49	0
3. That industrial arts education should be a part of the general education curriculum of all secondary schools.....	94	5	1	77	23	0
4. That girls should be encouraged to elect courses in industrial arts education.....	89	10	1	62	37	1
5. That materials which are used by the student in the industrial arts laboratory should be supplied at no cost to the student.....	29	67	4	25	74	1
6. That the college bound student should be encouraged to take courses in industrial arts education which relate to his area of study.....	95	4	1	92	5	3
7. That teachers of industrial arts education will probably find better answers to updating their knowledge by joining technical societies rather than turning to their own professional societies for help.....	55	40	5	35	58	7
8. That some industrial arts education courses should be structured toward avocational values.....	88	10	2	92	5	3

TABLE 12--Continued

PERCENT OF TABULATED RESULTS OF GENERAL OPINION QUESTIONS,
BY INDUSTRIAL ARTS TEACHERS AND SCHOOL ADMINISTRATORS

General Opinion Questions	Percent					
	Industrial Arts Teachers			Adminis- trators		
	Yes	No	Nonre- sponse	Yes	No	Nonre- sponse
9. That industrial arts education is a means of keeping low achievers in school.....	63	36	1	74	23	3
10. That the better students are usually discouraged by guidance personnel from taking industrial arts....	89	11	0	58	40	2
11. That industrial arts should be oriented toward pre-vocational training for particular students...	82	18	0	90	10	0

industrial arts should be oriented toward pre-vocational training for those students who would not otherwise have this opportunity.

Table 12 shows that 55 percent of the teachers believe they have a better chance of updating their knowledge by joining technical societies rather than turning to their own professional societies for help. This statement was rejected by 58 percent of the administrators indicating that they believe industrial arts teachers will probably find better answers to updating their knowledge by seeking advice from their own professional societies.

There appears to be general disagreement among school administrators on two general opinion questions. Table 12

shows that 51 percent of the administrators believe more emphasis should be placed on teaching the concepts of industry rather than the making of useful projects and that the public has a poor image of industrial arts. The teaching of concepts rather than the making of useful projects was rejected by 46 percent of the administrators; 49 percent indicated that the general public does not have a poor image of industrial arts. These same two questions were rejected by only 29 percent of the teachers.

The respondents were asked if they thought the better students were usually discouraged by guidance personnel from taking industrial arts. Table 12 shows that 89 percent of the teachers and 58 percent of the administrators believe students were being discouraged by guidance personnel. Another question had to do with girls taking industrial arts. This concept was widely accepted by 89 percent of the teachers and by 62 percent of the administrators, both indicating that girls should be encouraged to elect courses in industrial arts education.

Desirable Elements

Industrial arts teachers and school administrators were asked to evaluate eight suggested elements of an industrial arts program. Table 13 shows the mean degree of evaluation placed on the suggested elements by participants. These elements were not evaluated on the basis of importance, but rather on the basis of how well each element was presently meeting the needs of each teacher in his situation. All

elements, except one, were ranked higher among administrators than teachers. Teachers expressed a greater degree of satisfaction toward the present salary schedule than did school administrators. Industrial arts teachers indicated that improvements were definitely needed in the areas of maintenance services and laboratory equipment. According to school administrators the two areas needing the most improvement were supply budget and laboratory equipment.

TABLE 13

MEAN DEGREE OF EVALUATION PLACED BY INDUSTRIAL ARTS TEACHERS AND SECONDARY SCHOOL ADMINISTRATORS ON VARIOUS SUGGESTED ELEMENTS OF A GOOD INDUSTRIAL ARTS PROGRAM AS THEY RELATED TO THEIR SITUATION

Suggested Elements of a Good Industrial Arts Program	Mean Degree of Evaluation*	
	Industrial Arts Teachers	Administrators
1. Curriculum.....	2.89	3.09
2. Teaching Facilities..	2.58	2.87
3. Laboratory Equipment.	2.49	2.80
4. Supply Budget.....	2.56	2.73
5. Maintenance Services.	2.17	2.83
6. Salary Schedule.....	3.42	2.88
7. Instructors.....	3.20	3.27
8. Supervision.....	2.85	3.03

*Key: 4-Excellent; 3-Good; 2-Fair; 1-Poor.

By excluding the previously mentioned areas, there appears to be general agreement between participant

groups. Table 14 was designed to compare the eight suggested elements of an industrial arts program as ranked by industrial arts teachers and secondary school administrators.

TABLE 14

SUGGESTED ELEMENTS OF AN INDUSTRIAL ARTS PROGRAM AS RANKED BY PARTICIPANT GROUPS, IN DESCENDING ORDER

Elements	
Teacher Ranking**	Administrative Ranking*
1. Salary Schedule	1. Instructors
2. Instructors	2. Curriculum
3. Curriculum	3. Supervision
4. Supervision	4. Salary Schedule
5. Teaching Facilities	5. Teaching Facilities
6. Supply Budget	6. Maintenance Services
7. Laboratory Equipment	7. Laboratory Equipment
8. Maintenance Services	8. Supply Budget

*Based on data presented in Table 13.

CHAPTER V

CONCLUSIONS

Summary

The purpose of this research was to compare the attitudes and opinions of industrial arts teachers with secondary school administrators regarding the role of industrial arts education in the secondary school.

Industrial arts teachers and administrators were asked to evaluate ten industrial arts objectives as being excellent, good, fair, or poor. All ten objectives were evaluated by administrators as being good or excellent. Nine were rated by teachers as being good objectives. The other objective, to ascertain and develop the talents of students in technical fields and applied science was rated fair. The following four objectives received the highest evaluation rating by both teachers and administrators:

1. To develop desirable attitudes and practices with respect to health and safety.
2. To develop a relative measure of skill in the use of tools and machines.
3. To develop desirable social attitudes and work habits.
4. To develop an interest in industry and an understanding of its place in our culture.

There was a great deal of agreement between teachers and administrators on five objectives. The greatest margin

of disagreement was on the objective to develop consumer knowledge and appreciation in the use of industrial products. This objective was ranked fifth by teachers and tenth by administrators.

The same ten objectives were again ranked by both participating groups; this time according to the degree of emphasis. Both teachers and administrators had a tendency to rate objectives higher on the basis of emphasis rather than evaluation. The following three objectives were ranked highest, according to degree of emphasis, by both teachers and administrators:

1. To develop desirable social attitudes and work habits.
2. To develop a relative measure of skill in the use of tools and machines.
3. To develop desirable attitudes and practices with respect to health and safety.

The objective, to develop worthy leisure-time interests was ranked fifth by administrators and ninth by teachers. The following objectives were ranked considerably higher among teachers. They are:

1. To develop problem-solving skills related to industrial materials and processes.
2. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.

Each participant was asked to evaluate the elements of an industrial arts program on the basis of how it relates to his situation. All elements, except one, were ranked higher among administrators than among teachers. Teachers

expressed a greater degree of satisfaction with the present salary schedule than did administrators. The four elements evaluated as needing the most improvement by both participating groups were supply budget, laboratory equipment, maintenance services, and teaching facilities. These four elements, with the exception of maintenance services, are costly to implement. This indicates that the shortage of funds, to some degree, has stifled the progress of industrial arts education.

Implications

The following implications represent an attempt to suggest ways to improve industrial arts education in secondary schools. The implications listed below had the majority support of both industrial arts teachers and school administrators. They were:

1. The American Industrial Arts Association should recommend standards for teacher preparation and certification.
2. Teachers should work frequently in industry and preferably in the area they teach.
3. More federal aid for industrial arts.
4. College bound students should be encouraged to take courses in industrial arts which relate to their area of study.
5. Industrial arts should be offered by all secondary schools.
6. Industrial arts should be oriented toward pre-vocational training for particular students.
7. The public image of industrial arts needs improvement.

8. Girls should be encouraged to elect courses in industrial arts.
9. Guidance personnel should stop discouraging and start encouraging the better students to take industrial arts.

There appeared to be some disagreement between industrial arts teachers and school administrators on some of the basic issues presented in this report. In final analysis, the agreements exceeded the disagreements indicating that there was a great deal of agreement between these two professional groups.

CHAPTER VI

SUGGESTIONS FOR FURTHER STUDY

As a result of investigations made for this study, the author has realized some possibilities and need for additional studies.

1. A study of the attitudes and opinions of guidance personnel toward the role of industrial arts education in the secondary school.
2. A study of the attitudes and opinions of various semi-skilled, skilled, and professional groups as to the image of industrial arts education in the secondary school.
3. A study of the advantages and disadvantages of having girls enrolled in industrial arts education.
4. A study of the relationships that may be developed between industrial arts education and the college bound student.

THE ROLE OF INDUSTRIAL ARTS EDUCATION IN SECONDARY SCHOOLS

Dear Participant:

Information Form

Today, industrial arts education is offered in seventy-five per cent of the public secondary schools throughout the United States. In Illinois, eighty-seven per cent of the public secondary schools have industrial arts programs. We as administrators and industrial arts teachers certainly recognize the importance of industrial arts education and have developed a basic general philosophy as to its role in the secondary schools. But, do we as administrators and industrial arts teachers agree precisely as to what this role should be. This becomes the purpose of this survey.

You have been selected to participate in this survey of public secondary school educators in central Illinois. It will take about ten minutes of your time to complete this form. Your immediate cooperation in this research project will be greatly appreciated.

Sincerely yours,

Harold Vahling
Harold Vahling

DIRECTIONS: Please complete the information form by indicating your philosophy regarding the role of industrial arts education in the secondary schools. Return the completed form in the self-addressed envelope enclosed. (Do not report vocational-industrial or technical courses.)

I. PERSONAL (This section is optional.)

NAME _____ POSITION _____
SCHOOL _____ CITY _____

II. GENERAL

1. Please check the type of community which the school serves.

_____ Agricultural _____ Residential _____ Light Industrial _____ Heavy Industrial

2. Please check the number of students currently enrolled in your school.

_____ 149 and under _____ 300 to 499 _____ 750 to 999 _____ 1250 to 1499
_____ 150 to 299 _____ 500 to 749 _____ 1000 to 1249 _____ 1500 and over

3. Please check your type of school organization.

a. Two-year junior high school (7-8) _____ d. Four-year high school (9-12) _____
b. Three-year junior high school (6-8 or 7-9) _____ e. Six-year high school (7-12) _____
c. Three-year high school (10-12) _____ f. Other _____

4. Please check the highest educational degree which you have earned.

_____ No degree _____ Associate degree _____ Bachelor's _____ Master's _____ Doctor's _____ Other

5. What is the total number of students enrolled in industrial arts in your school? Students.

6. What is the total number of industrial arts teachers in your school?

7. What areas of industrial arts are offered in your school? (Please check those that apply)

_____ Drafting _____ Woodworking _____ Power Mechanics _____ Electricity-Electronics _____
_____ Metalworking _____ Graphic Arts _____ Crafts _____ Other (Please specify) _____

8. At what grade level is industrial arts required in this school? (Check those that apply)

a. Not required at any grade level _____ c. Grade 8 _____ e. Grade 10 _____
b. Grade 7 _____ d. Grade 9 _____ f. Other _____

III. OBJECTIVES

Please evaluate the following suggested objectives of industrial arts education as being excellent, good, fair, or poor. (Check one for each objective)

	E	G	F	P
1. To develop an interest in industry and an understanding of its place in our culture.				
2. To develop a relative measure of skill in the use of tools and machines.				
3. To develop problem-solving skills related to industrial materials and processes.				
4. To ascertain and develop the talents of students in technical fields and applied science.				
5. To develop desirable social attitudes and work habits.				
6. To develop consumer knowledge and appreciation in the use of industrial products.				
7. To provide pre-vocational training for students who would not otherwise have this opportunity.				
8. To develop worthy leisure-time interests.				
9. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.				
10. To develop desirable attitudes and practices with respect to health and safety.				

IV. OBJECTIVES

In your opinion, what degree of emphasis should be placed on the following suggested objectives of industrial arts education. (Check one for each objective) *High *Medium *Low *None

	*H	*M	*L	*N
1. To provide pre-vocational training for students who would not otherwise have this opportunity.				
2. To ascertain and develop the talents of students in technical fields and applied science.				
3. To develop an interest in industry and an understanding of its place in our culture.				
4. To develop consumer knowledge and appreciation in the use of industrial products.				
5. To develop desirable attitudes and practices with respect to health and safety.				
6. To develop problem-solving skills related to industrial materials and processes.				
7. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.				
8. To develop a relative measure of skill in the use of tools and machines.				
9. To develop desirable social attitudes and work habits.				
10. To develop worthy leisure-time interests.				

V. INFLUENCING FACTORS

Do you believe the following would be helpful in improving industrial arts education:

- For the American Industrial Arts Association to recommend standards for teacher preparation and certification? Yes ___ No ___
- For industrial arts teachers to work frequently in industry in order to promote a curriculum which is industry-oriented? Yes ___ No ___
- For industrial arts teachers to have industrial experience in the area they teach in order to be competent? Yes ___ No ___
- For Congress to appropriate more federal aid for industrial arts with less red tape? Yes ___ No ___

VI. GENERAL OPINION QUESTIONS

Do you believe:

- That more emphasis should be placed on teaching the concepts of industry rather than the making of useful projects? Yes ___ No ___
- That the general public has a poor image of industrial arts education? Yes ___ No ___
- That industrial arts education should be a part of the general education curriculum of all secondary schools? Yes ___ No ___
- That girls should be encouraged to elect courses in industrial arts education? Yes ___ No ___
- That materials which are used by the student in the industrial arts laboratory should be supplied at no cost to the student? Yes ___ No ___
- That the college bound student should be encouraged to take courses in industrial arts education which relate to his area of study? Yes ___ No ___
- That teachers of industrial arts education will probably find better answers to updating their knowledge by joining technical societies rather than turning to their own professional societies for help? Yes ___ No ___
- That some industrial arts education courses should be structured toward avocational values? Yes ___ No ___
- That industrial arts education is a means of keeping low achievers in school? Yes ___ No ___
- That the better students are usually discouraged by guidance personnel from taking industrial arts? Yes ___ No ___
- That industrial arts should be oriented toward pre-vocational training for particular students? Yes ___ No ___

VII. SUGGESTED IMPROVEMENTS

Please evaluate the following desirable elements of a good industrial arts education program as they relate to your situation. (Check one for each item)

	Excel- lent	Good	Fair	Poor		Excel- lent	Good	Fair	Poor
1. Curriculum					5. Maintenance services				
2. Teaching facilities					6. Salary schedule				
3. Laboratory equipment					7. Instructors				
4. Supply budget					8. Supervision				

Approved by:

Dr. C. E. Strandberg, Thesis Adviser
School of Industrial Arts and Technology
Eastern Illinois University
Charleston, Illinois 61920

Return to:

Harold Vahling
Jefferson Jr. High School
1200 South 9th Street
Mattoon, Illinois 61938

THE ROLE OF INDUSTRIAL ARTS EDUCATION IN SECONDARY SCHOOLS
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a. Two-year junior high school (7-8) _____ d. Four-year high school (9-12) _____
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c. Three-year high school (10-12) _____ f. Other _____

4. Please check the highest educational degree which you have earned.

_____ No degree _____ Associate degree _____ Bachelor's _____ Master's _____ Doctor's _____ Other

5. What is the total number of students enrolled in industrial arts in your school? _____ Students.

6. What is the total number of industrial arts teachers in your school? _____

7. What areas of industrial arts are offered in your school? (Please check those that apply)

_____ Drafting _____ Woodworking _____ Power Mechanics _____ Electricity-Electronics _____
_____ Metalworking _____ Graphic Arts _____ Crafts _____ Other (Please specify) _____

8. At what grade level is industrial arts required in this school? (Check those that apply)

a. Not required at any grade level _____ c. Grade 8 _____ e. Grade 10 _____
b. Grade 7 _____ d. Grade 9 _____ f. Other _____

III. OBJECTIVES

Please evaluate the following suggested objectives of industrial arts education as being excellent, good, fair, or poor. (Check one for each objective)

	E	G	F	P
1. To develop an interest in industry and an understanding of its place in our culture.				
2. To develop a relative measure of skill in the use of tools and machines.				
3. To develop problem-solving skills related to industrial materials and processes.				
4. To ascertain and develop the talents of students in technical fields and applied science.				
5. To develop desirable social attitudes and work habits.				
6. To develop consumer knowledge and appreciation in the use of industrial products.				
7. To provide pre-vocational training for students who would not otherwise have this opportunity.				
8. To develop worthy leisure-time interests.				
9. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.				
10. To develop desirable attitudes and practices with respect to health and safety.				

IV. OBJECTIVES

In your opinion, what degree of emphasis should be placed on the following suggested objectives of industrial arts education. (Check one for each objective) *H High *M Medium *L Low *N None

	*H	*M	*L	*N
1. To provide pre-vocational training for students who would not otherwise have this opportunity.				
2. To ascertain and develop the talents of students in technical fields and applied science.				
3. To develop an interest in industry and an understanding of its place in our culture.				
4. To develop consumer knowledge and appreciation in the use of industrial products.				
5. To develop desirable attitudes and practices with respect to health and safety.				
6. To develop problem-solving skills related to industrial materials and processes.				
7. To develop skills in the production and use of sketches, schematics, graphs, diagrams, and drawings.				
8. To develop a relative measure of skill in the use of tools and machines.				
9. To develop desirable social attitudes and work habits.				
10. To develop worthy leisure-time interests.				

V. INFLUENCING FACTORS

Do you believe the following would be helpful in improving industrial arts education:

- For the American Industrial Arts Association to recommend standards for teacher preparation and certification? Yes ___ No ___
- For industrial arts teachers to work frequently in industry in order to promote a curriculum which is industry-oriented? Yes ___ No ___
- For industrial arts teachers to have industrial experience in the area they teach in order to be competent? Yes ___ No ___
- For Congress to appropriate more federal aid for industrial arts with less red tape? Yes ___ No ___

VI. GENERAL OPINION QUESTIONS

Do you believe:

- That more emphasis should be placed on teaching the concepts of industry rather than the making of useful projects? Yes ___ No ___
- That the general public has a poor image of industrial arts education? Yes ___ No ___
- That industrial arts education should be a part of the general education curriculum of all secondary schools? Yes ___ No ___
- That girls should be encouraged to elect courses in industrial arts education? Yes ___ No ___
- That materials which are used by the student in the industrial arts laboratory should be supplied at no cost to the student? Yes ___ No ___
- That the college bound student should be encouraged to take courses in industrial arts education which relate to his area of study? Yes ___ No ___
- That teachers of industrial arts education will probably find better answers to updating their knowledge by joining technical societies rather than turning to their own professional societies for help? Yes ___ No ___
- That some industrial arts education courses should be structured toward avocational values? Yes ___ No ___
- That industrial arts education is a means of keeping low achievers in school? Yes ___ No ___
- That the better students are usually discouraged by guidance personnel from taking industrial arts? Yes ___ No ___
- That industrial arts should be oriented toward pre-vocational training for particular students? Yes ___ No ___

VII. SUGGESTED IMPROVEMENTS

Please evaluate the following desirable elements of a good industrial arts education program as they relate to your situation. (Check one for each item)

	Excel- lent	Good	Fair	Poor		Excel- lent	Good	Fair	Poor
1. Curriculum					5. Maintenance services				
2. Teaching facilities					6. Salary schedule				
3. Laboratory equipment					7. Instructors				
4. Supply budget					8. Supervision				

Approved by:

Dr. C. E. Strunberg, Thesis Adviser
School of Industrial Arts and Technology
Eastern Illinois University
Charleston, Illinois 61920

Return to:

Harold Vahling
Jefferson Jr. High School
1200 South 9th Street
Mattoon, Illinois 61958

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