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OCCUPATIONAL IMPLICATIONS OF THE INDUSTRIAL ARTS
PROGRAM IN COFFEYVILLE, KANSAS

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

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By

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INDUSTRIAL EDUCATION
and ART DEPT.
Kansas State Teachers College
Pittsburg, Kansas

KANSAS STATE TEACHERS COLLEGE
Pittsburg, Kansas

July, 1954

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ABSTRACT

The purpose of this thesis was to determine the occupational implications of an industrial arts curriculum when used as terminal education.

Questionnaires were sent to three groups, namely, past students, employers and state teachers.

The past student group was selected to eliminate those having more than a high school education and those working in jobs not related to industrial arts training.

The employers were selected on the basis of job requirements and number of employees.

The teachers were picked at random from all points of the state regardless of school size.

Letters containing the questions were sent to these three groups to gain the information used in the text.

The findings of the study indicate definite advantages for industrial art students when compared to people with similar education but not having the industrial arts training.

Changes to be desired in the present program and the need for expansion of that program to meet anticipated increases in enrollment were brought to light also.

It is hoped that the findings of this study will be used to encourage more students to follow the industrial art curriculum. The study should also supplement the occupational information given in these courses.

CHAPTER I

INTRODUCTION

Statement of the Problem

This is a study of the present industrial arts program at the McFarland Trade School in Coffeyville, Kansas. It is being made to determine the value of the training to its students and to determine the type of training that appears to be most effective. Suggestions for future changes or additions will be based on data obtained from past students, employers in manufacturing concerns and teachers throughout the state.

Need For the Study

A training institution of the type being studied is most effective when the instruction being dispensed is timely. An institution has need to examine its progress regularly to determine if its program is in step with the technological changes being made in the industries in which the school intends to place its product.

It is becoming an increasingly important function of a training establishment to keep its students informed of the changing times and the possible effect those changes may have on their present and future life.

Purpose of the Study

The purpose of the study is to determine as far as possible, the value of the industrial arts program to the students of Coffeyville, who work in jobs that require training similar to that given in industrial arts. If the program is functioning properly, the study should show positive results with regard to obtaining a job, holding the job, advancing in a job, and the ability to earn a higher salary in a shorter time than those students who did not take advantage of the training.

The study will further endeavor to establish criteria for future trends in expansion and revision of the present system of education. It should also serve as a guide to the teachers whose responsibility it is to guide and direct students in their occupational choice.

CHAPTER II

METHODS USED IN THE STUDY

Survey of Past Students

This study is concerned with the value of industrial arts training to those having a high school education or less. On this basis, cards were pulled from the permanent record file which fulfilled this requirement.

These cards were sorted to obtain the names of individuals actually employed in jobs whose requirements paralleled the training given in industrial arts courses.

The latest information available was used to eliminate as far as possible the chance that some people had changed jobs or had moved out of town.

By this process, nearly one hundred names appeared in this select group. In order to simplify computation of the returns, additional cards were added to round off the group to an even one hundred.

It was felt that the time spent in this selection was very worth-while in that practically all returns were valid and a large number of the manufacturing concerns were represented. It is possible that a broader group could have been used but the reliability of the study would have suffered due to loss of control of the selection factor.

A letter of explanation and a questionnaire form were sent to each member of the selected group.

Survey of Local Employers

Questionnaires were sent to manufacturing concerns whose job requirements coincide with the training given in the school.

Selection was not based on the end product of the company but on the plant requirements. For instance, a baking company's preparation of food products would not parallel industrial arts training, but there are several jobs in the maintenance and transportation department that would.

Twenty-five of the thirty industries in Coffeyville had the necessary qualifications and a sufficiently large number of employees to justify their inclusion in the study.

Letters were sent to the heads of these concerns seeking their opinions as to the relative merits of a worker having industrial arts training.

Survey of State Teachers

The teacher group was selected from a list of teachers actively engaged in the various industrial education associations. An attempt was made to cover all parts of the state rather than the southeastern section.

Selection of this group was made on the assumption that teachers belonging to professional organizations should be well informed and a good source of dependable information.

Twenty-five letters to this group was deemed satisfactory since the state was well covered and further selection from the available list would have resulted in some duplication of the schools contacted. It was felt that one return from a given school would be sufficient coverage of that school's policies.

The information gained from the three groups of questionnaires combined with the data gleaned from the books of several authors writing on the subject, make up the body of the thesis.

CHAPTER III

PANORAMA

Coffeyville is one of the few cities in the state in which more people work in manufacturing industries than in any other line of business. "Almost sixty per cent of these workers are classed as unskilled or semi-skilled, which means that they are employed in jobs that require little or no specific training."¹

It is probable that a certain amount of preliminary training would be of value to anyone seeking jobs in these two classifications. Mays states that:

In many processes classed as unskilled, both time and energy can be saved by doing work in some better, or the best way. The unskilled is not the sort of worker to hit on this way of doing, except by chance. Hence it is to the advantage of both employer and employee that the simple, brief training necessary for efficient performance of work be given.... In many industries the actual production of manufactured articles is performed almost wholly by the semiskilled. These are workers who operate machines requiring a little knowledge and a few specialized skills, or who perform other tasks with a like requirement of knowledge and skill. No extended training is needed, but a short period of instruction and practice is necessary.²

¹R. H. Breckenridge, "An Industrial Survey of Coffeyville, Kansas." (unpublished project of the Coffeyville Chamber of Commerce, 1950), p. 12.

²Arthur B. Mays, Principles and Practices of Vocational Education (New York: McGraw-Hill Book Co., Inc., 1948), p. 172.

In order that the reader might gain a better insight into the job possibilities, a list of the manufacturing concerns in Coffeyville is given. All skilled and unskilled job titles may be found in the Dictionary of Occupational Titles and will not be duplicated here.

Firm Name	Products
Acme Foundry & Machine Co.	Gray iron and semi-steel castings. Industrial and oil field machinery and equipment.
Armstrong Creamery Co.	Ice cream
Bergman Neon Co.	Neon Signs
Brinker Neon Co.	Neon Signs
C. C. Grain Co.	Feeds
Coffeyville Packing Co.	Meat
Coffeyville Publishing Co.	Newspaper --- Job Printing
Coffeyville Tent and Awning Co.	Awnings---Canvas Products
Consumers Cooperative Assoc.	Soybean meal and oil
Continental Can Co	Aircraft Assemblies and Can Machine repair
Cooperative Refinery Assoc.	Petroleum Products
Exner Dodge, Inc.	Swagged Nipples, Bull Plugs Packers and Oil Field Equipment
Fairchilds Memorials	Monuments
Frazier's Seed Co.	Agricultural Seed
Funk Aircraft	Airplanes---Industrial engine conversions
Ivan Morrow Pattern Shop & Foundry, Inc.	Aluminum Castings
Jensen Brothers Mfg. Co	Pumping units, Speed Reducers
Junge Baking Co.	Bread
Ludowici-Celadon Co.	Roofing, Tile, and Slabs
Moore-Lowry Flour Mills Co.	Flour
Nutrena Mills, Inc.	Livestock and Poultry Feeds
North American Car Corp.	Rebuilding of tank cars
Ozark Smelting & Mining Co.	Lithopone, zinc oxide, zinc sulphate
Page Milk Co.	Evaporated Milk, Dairy Products

Firm Name, Cont'd.	Products, Cont'd.
Parkersburg Rig & Reel Co.	Oil Well Pumping Units, Pre-Fabricated Steel Buildings
Robinson Packer Co.	Oil Field equipment
Southwest Service Co.	Ice
Taylor Bag Co.	Bag Processing
United Brick & Tile Co.	Bricks & Structural Tile

Industrial arts in fulfilling its general education objectives could furnish much of the knowledge and skills necessary for successful entry into these jobs. According to Struck:

Industrial arts is a pathway that helps reduce the remoteness of school work from life by providing content that is true to life and problems that develop the attitudes, knowledges, and skills that are the essence of a better social order.³

Much of the success of the present day employee is dependent not on his ability to do the job but, upon his ability to get along with others. One might refer to it as man's social reputation. He must be able to take and give orders, share the responsibilities of the job and work in such a way that his actions will not endanger the lives of his fellow men.

The position of the school in preparing its students for the world of work is very aptly put by Russell.

The full time high school should not attempt to turn out full fledged craftsmen completely ready to step into an occupational situation. Instead its efforts should be centered on the provision of

³Theodore F. Struck, Creative Teaching (New York: John Wiley and Sons, Inc., 1938), p. 3.

training that will enable the young worker to develop skill on the job more quickly than he otherwise would, that will enable him to engage in his occupation with satisfaction, and that will permit him to shift with a minimum of difficulty to some new occupation if and when his job vanishes in the course of technological development.⁴

The fundamental aim of vocational education is to train the worker so that he may enter upon a job with advanced standing. Although it serves a definite need, not all students should be given this type of training. In most cases they are not mature enough to make a proper selection or do not stay in school long enough to complete the prescribed course. A large number do not possess the physical capacity and coordination to be successful in the skilled trades for which they are being trained. In industries where advancement is based on seniority, these people are undesirable. They can, however, be given a short training period such as an industrial arts course and be fitted into a job in the realm of their ability. Bell must have been of a similar opinion when he said:

The satisfactory adjustment of workers on jobs does not, in the majority of instances, call for specialized vocational training in schools.⁵

An effort has been made, in the preceeding pages, to define a condition which exists in the labor market

⁴John Dale Russell, Vocational Education (Washington D. C.: Washington Advisory Committee on Education, Staff Study No. 8, 1938), p. 216.

⁵Howard M Bell, Matching Youth and Jobs. (Washington: American Council on Education, 1940), p. 57.

and to more or less define the group with which this study is concerned. Since seventy per cent of the jobs of industry can be filled by workers having less than a high school education, it seems expedient that the schools provide as broad a program as possible in the short time in which they retain their students.

After reading this brief resume, one may understand better the conditions in which the local program is functioning.

CHAPTER IV

FINDINGS OF QUESTIONNAIRES

Past Students

The past students were asked fourteen questions with the fifteenth being an optional comment blank where they might make suggestions or comments not included in the body of the questionnaire.

There were eighty-two returns from the one hundred sent out.

Question 1. Did you take any industrial arts subjects while in school? Yes _____ No _____

There were thirty-six affirmative and forty-six negative answers to this question.

Question 2. Check the subjects you have taken.

A. Woodworking	E. Sheet Metal	I. Crafts
B. Drawing	F. Electricity	J. Printing
C. General Shop	G. Machine Shop	K. Others
D. Auto Mechanics	H. Art	

The subjects and quantities follow:

Woodworking	28
Drawing	20
Auto Mechanics	14
General Shop	10
Machine Shop	8
Electricity	8
Sheet Metal	8
Printing	4
Crafts	2
Others	0

It will be noted that the total does not balance with the thirty-six students having taken industrial arts

due to the fact that some checked two or more subjects.

Question 3. Which of the above subjects helped you the most? _____ the least? _____

<u>Course</u>	<u>Most</u>	<u>Least</u>
Woodworking -----	6	4
Drawing -----	6	4
Auto Mechanics -----	6	2
Machine Shop -----	6	2
Machine Shop -----	8	0
General Shop -----	2	0
Sheet Metal -----	0	4
Electricity -----	2	0
Crafts -----	0	2
Blank -----	10	20

It is felt that a better return would have been of value in that a cross-check of the jobs held by the six that found woodworking of the most value, showed them to be a carpenter, railway carman, carpenter shop foreman, contractor, cabinet maker, and fire chief. The writer was intrigued by the return from the fire chief. A check into the situation showed that the fire department spends a good deal of its spare time in building and repairing toys for needy children at Christmas time.

Question 4. Did industrial arts influence you in the selection of your job? Yes _____ No _____

Twenty answered "yes" to this question, sixteen answered "no". The jobs held by both groups are listed as follows:

Did Influence

Carpenter foreman
Insurance agent
Pipe fitters
Yard foreman

Did Not Influence

Railway carman
Fire Chief
Assemblers (oil field supply)
Electrical engineer

Did Influence, Cont'd.

Die finishers

Contractors

Machinists

Spray painter

Two did not list job title.

Did Not Influence, Cont'd.

General Construction

Cashier

Stillmen

It is hard to look into one's past and determine those things which influenced a decision. The list above would appear to lend proof to this belief in that all the jobs listed could have been aided by a good industrial arts program. There seem to be several probabilities in the evaluation of the findings. Whatever the reason, it is a problem that would merit further study.

In order to determine the value of the program of industrial arts in the area of monetary return, the next three questions pertain to salary and the length of time on a job. The results are rather interesting.

Question 5. What was your starting salary per hr. _____

This question was answered by thirty of those having had industrial arts training. Six did not answer.

The salaries ranged from a minimum of forty cents per hour to two dollars and twenty-five cents per hour maximum. The average starting salary for the thirty returns was one dollar and nine and four-tenths cents.

Those not having industrial arts training returned twenty-eight proper returns, two improperly filled and sixteen blank. The salary for this group ranged from a minimum of twenty-five cents per hour to one dollar and

seventy-five cents maximum. The average starting salary for the twenty-eight returns was eighty cents per hour.

The people who had the advantage of industrial arts training received a starting salary that was twenty-nine and four-tenths cents per hour higher than the other group.

Question 6. How long have you worked at your present job? _____ Years _____ Months

Those having industrial arts returned thirty-two statements.

The range in time was from a minimum of one year and three months to thirty-five years maximum. The average time on the same job for this group was ten years, six and five-eighths months.

The non-industrial art group returned twenty-eight statements.

The range in time for this latter group was from a minimum of one year and three months to thirty-six years maximum. Thus the average time spent on a job was thirteen years, six and eight-tenths months.

Although the minimum and maximum time spent on the same job was almost exactly the same, the latter group spent three years and two-tenths months, average time, longer on the same job.

Question 7. What is your present salary per hr? _____

The industrial arts group showed thirty returns.

The present salary for this unit ranged from a minimum

of one dollar and sixty cents to a maximum of three dollars and eighty cents. The average hourly wage then was two dollars and thirty-seven and three-tenths cents.

The other group returned twenty-eight returns.

These salaries ranged from a minimum of one dollar and forty cents to two dollars and ninety cents per hour.

The average present salary for this group was two dollars and six and three-tenths cents.

In summing up the results of the last three questions, the figures show that students who had the industrial arts training earned a higher salary to begin with. It was \$1.094 against \$0.80. They spent less time on the same job. It was 10 years, 6-5/8 months, against 13 years, 6/8 months. They are also making a higher salary at the present time. It was \$2.375 against \$2.063. For a graphic comparison, see Figure 1, page 16, and Figure 2, page 17.

Question 8. Do you consider industrial arts good training for all boys? Yes _____ No _____

All eighty-two returns without exception were in the affirmative.

This one fact should encourage every industrial arts teacher to do his utmost to maintain this feeling of the public. A good public relations program has and can do much to improve on this apparent feeling of good will toward the school.

Question 9. Do you think the school should offer more industrial arts subjects? _____

cents	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
<u>Minimum</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Starting</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<u>Average</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Starting</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<u>Maximum</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Starting</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<u>Minimum</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Present</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<u>Average</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Present</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
<u>Maximum</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Present</u>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<u>Salary</u>	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Industrial Arts Students --
Non-Industrial Arts Students xx

Figure 1. COMPARISON OF SALARY FOR INDUSTRIAL AND NON-INDUSTRIAL ART STUDENTS

Years	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
<u>Min.Time</u> <u>on Job</u>	-				1 yr. 3 mo.															
	x				1 yr. 3 mo.															
<hr/>																				
<u>Ave.Time</u> <u>on Job</u>	-----																			10 yrs. 6-5/8 mo.
	xxxxxxxxxxxxxxxxx																			13 yrs. 6.8 mo.
<hr/>																				
<u>Max.Time</u> <u>on Job</u>	-----																			35 yrs.
	xx																			

Figure 2 COMPARISON OF TIME SPENT ON A JOB BY INDUSTRIAL
AND NON-INDUSTRIAL ARTS STUDENTS

This question brought in forty-two affirmative and twenty negative returns and twenty blanks. The fact that the recipient was expected to expand on an affirmative answer probably affected the returns on this question to some extent.

Question 10. If No. 9 is "yes", what additions would you suggest?

Only twenty persons elected to answer this question and the value of these twenty is rather dubious. The suggested additions are plumbing, Diesel mechanics, electricity, electronics, sheetmetal, shop mathematics, welding, air-conditioning, television service, blueprint reading, plastics, refrigeration and pipefitting.

The suggested course additions seem to indicate a misconception of the public toward industrial arts. Although some of the suggestions are industrial arts

possibilities, most of them would require a vocational program.

Question 11. Do you consider industrial arts projects as, good training_____ a waste of time_____ some of each_____?

Seventy-eight felt that the projects used provided good training. Two felt that some projects were a waste of time and two chose not to answer.

Each new day brings more advances in the field of technology until the possibility of things to be learned is staggering. There has always been some question in the writer's mind as to the amount of time to spend studying these and the requisites of the well-rounded boy. Therefore the following question was included in the survey.

Question 12. Do you think there should be more_____, less_____, or no_____ reading material in connection with shop work?

Fifty-eight thought there should be more reading material given. Six thought there should be less and eighteen expressed no opinion.

Most of the polled group felt the need for more related study in connection with shop work as indicated by the next question. It would appear that there is need of a related course for industrial arts as well as vocational education shop work.

Question 13. How much time do you think should be spent in shop work per day? One hour_____, two hours_____, three hours_____.

Twenty persons felt that one hour was sufficient. Fifty-two felt that two hours would be better and only eight persons felt that the classes needed to be three hours long. Two did not express an opinion.

Question 14. Do you think your industrial arts experience helped you on your job? _____

Since this question pertained only to that group which had taken industrial arts training there were only thirty-six returns possible. Thirty of these people felt that the experience had been of help to them.

Question 15. Comments on your experience with, or attitude towards industrial arts.

Only thirteen expressed any feelings. These are quoted as follows:

"My experience is that in a school term there is not enough time to completely master a given subject. That you are only equipped with the basic principles of that particular subject, and not sufficiently qualified to compete for jobs in that field."

"A man will use every thing he learns some time during his life. Even if he doesn't use it every day, it comes back to him quick."

"More and more we need good skills in the trades and several years experience under good understudy system in the handling of tools and how to use them and take care of them."

"Nearly every boy should take the course."

"I think industrial arts should be required for all boys and preferably in junior and senior years."

"Anyone taking all the courses he can, will at one time or another put them to some use. Also taking the course will put a mind to active use instead of becoming dull and monotonous regardless of age."

"Mechanical drawing has done me a lot of good, and the more time that could be spent in shop, giving the boys actual experience, the better."

"Industrial arts is important training to all students because, this is an industrial age. General shop is an important subject until the student with the help of the teacher finds his talent, then he should specialize in as many talents as may be found. Good workmanship has always been in demand."

"Have completed courses in electricity and plastics as well as one in business administration and accounting, and find all these are very beneficial one way or another in almost any place I find employment."

"It is a good subject and I believe that every boy should take it. They will learn a good trade that will help them in the future."

"Industrial arts teaches the young man to use tools, which I think will always come in handy to him, regardless of his vocation in life."

"I think all schools should teach industrial arts, as it helps boys now to get better jobs after they are out of school."

"I graduated from a small town high school in 1929, where no industrial art subjects were offered. I think schools have really advanced since that time and children should really take advantage of their opportunities."

The preceding pages have been concerned with questions put to people employed in the working world and to the answers and statements which they have returned. In general, it would appear that the industrial arts program is serving a need and in most cases has been a definite benefit to those who took advantage of it.

The employees have expressed themselves from their point of view, but to expand the picture, we must find the point of view of the employer.

Heads of Manufacturing Concerns

To gain this view point, letters containing four questions were sent to the various concerns in Coffeyville. Since these letters directed the writer to express an opinion, tabulation of the results in amounts, number, or per cent is practically impossible. Therefore, the question will be stated with the answers quoted after the question.

Question 1. Do you believe that industrial arts training would help eliminate a substantial portion of "on the job" training?

"We do believe in industrial arts training in tending to eliminate a substantial portion of "on the job" training."

"I do believe that industrial arts training would help eliminate some of the "on the job" training."

"Most certainly."

"We feel that such training eliminates the need for such extensive training on the job."

"The answer to question "a" is, yes."

"Yes."

Question 2. What knowledge of materials, processes and jobs do you think would make for a more desirable employee?

"It would help, if employees had a general knowledge of all materials used in manufacturing, particularly why some materials are selected in place of others."

"We believe that more knowledge of the newer materials which are providing new services as well as replacement of the older materials would be well. Also, the use and care of the small tools, particularly the small power driven tools would be good."

"Metallurgy, protective corrosion treatment, cleaning treatment, and heat treating requirements

should all be very beneficial to any employee entering the field of work pertaining to metal forming."

"Not applicable to our organization, due to our bidding system."

Question 3. What skills should be promoted?

"Welding, mechanics and shop mathematics."

"Machine shop practices, sheet metal practice, tool and die making, should all be specifically promoted."

"We must confess that we are particularly interested in the skills and arts for the building construction industry, which, of course, overlap building maintenance. There are, of course many other skills which should be promoted for instance, that of maintaining the family automobile."

"Would not like to say."

Question 4. Would you prefer an applicant trained in specific skills, or one with broad general training?

"I think a broad general training would be more to an employee's advantage. One of the best things that an industrial arts program could do, would be the development of proper attitudes among young men seeking employment in manufacturing plants. By attitudes, I mean respect for their jobs, eagerness to learn new things, willingness to join with others for the purpose of earning a living, particularly eagerness to learn and study after their school days are over."

"We prefer applicants with broad general training rather than those who have specific skills. Those with broad general training seem to be more easily fitted into our job classifications, whereas it is more difficult to fit in our organization men who already have skills which have been developed elsewhere. It seems to me that somewhere in the educational training for young men for industrial services, they should be told about collective bargaining. There is no doubt but that collective bargaining will be with us for a long time. Young men should know their privileges and responsibilities in these regards when approaching an employer for work."

"Specific for refinery maintenance."

"Generally speaking, our preference in new employees is for the employee to have broad general training with specific highly developed skills in one or more phases of the manufacturing field, such as, tool maker, tool designer, milling machine operator, etc."

"Prefer one with broad general training. As you no doubt know, our plant is more or less a chemical plant and the only type of skilled employee we use that would come under your category of industrial arts would be welders, electricians and probably automotive mechanics. All other skilled or semi-skilled employees have to have "on the job" training."

Although the coverage of the manufacturing concerns was not as complete as the writer would have liked it to be, the returns do tend to show that employers recognize the value of a good industrial arts program to them and their employees.

Of poignant interest to the industrial arts instructor is the feeling of the employers toward the type of training they would like for their prospective employees. It is interesting to note that almost without exception, they preferred the broad general training program.

Since this feeling does exist, it is highly probable that a program worked out jointly between the schools and the manufacturing concerns would result in a very effective course. The end result of such a program could mean a better student product, a more satisfied employer and a better rating for our school.

When the employer was approached with the problem of what to teach in the shop, he held with his convictions that a broad background of knowledge was best. Inasmuch

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as few students have any idea where they will be working or what they will be working on, this appears to be the only logical path to follow.

This trend in thinking seems to fit very well into the pattern of general education. Although there seems to be some disagreement as to course content, it is generally conceded that the development of tool skills and material handling is and always has been a primary function of the industrial arts shop.

Perhaps it would be well to define the term, "skill," at this time from the writer's point of view. Some employers expressed the opinion that it would be hard for any program to turn out skilled employees. In the sense that skill means acquired or developed ability advance to the point where the employee was ready to step into any work station, the writer would agree that it would be impossible. However, skill is not born in a person, but must be acquired. Any training that helps develop this ability is most certainly the teaching of skill or skills. The difference is in degree and not in fact.

To be genuinely progressive, in the best sense of the word, industrial arts does not have to discount the great importance of skill in shop and drawing room, nor conformity to the best industrial procedures in work. Nor does it have to adopt the cliches of the progressive-education terminology and apologize for the use of simple shop terms, and for greasy hands, and wearing of overalls in class.

Notwithstanding that the aims of industrial arts include more than manipulative processes with tools and machines, it is the part of wisdom for the shop

teacher, however "progressive" he may be, to remember that it was handwork and the operation of machines that brought industrial arts into the curriculum in the beginning of its history.⁷

Regardless of individual feeling toward progressive education, one must concede that it has its good points and that success with it as with anything is dependent on proper administration. When the needs of the students serve as a guide to the development of a program, a step has been taken in the proper direction.

The needs of the student are best found, not from the students in the class, but, from those students who have gone into the working world. They have had a chance to see the advantages gained or lost as the case may be, depending on their background. Lives there a teacher who has not heard someone say, "I wish I had taken this or that, or worked harder when I was in school"?

In summing up the findings from the questionnaires sent to the heads of the manufacturing concerns, one cannot help but appreciate the value such a study can be to the school, and particularly to the shop teacher. The product of the school is its students who, after graduation, immediately become the supporters for, or opposition to, the school's future development. It seems of urgent importance to consider this fact whenever and wherever programs are being set up or revised.

⁷Arthur B. Mays, "Progressive Education and Industrial Arts," School Shop, XIII (May, 1954), pp. 7 - 8, cont. 37.

The desire for broad general training expressed by the heads of manufacturing concerns, although none defined their ideas, certainly should merit some study by those interested in vocational education. The day trade program could be severely crippled if not lost entirely if this condition continues to grow. Action at this time is particularly important since Congress has the Smith-Hughes Bill under study with the idea of revising the whole method of expending the funds.

The preceding pages have been concerned with the findings from the people of the working world and the needs of a training program as they see it. It would be difficult and probably rather foolish to attempt a program based on these requirements alone.

Throughout the state are a number of good teachers representing years of experience with the problem of training young and old to fill the positions of industry. It is to these people that we now turn to round out this study.

State Teacher Group

The method of obtaining information by questionnaire, was used with this group also.

The questionnaire contained five questions. The recipient was asked for his opinion as to the value of

industrial arts training to those students who terminate their education at or below the high school level. All forms were returned with "yes" and "no" answers. Some elected to elaborate on certain points. Therefore, the findings will be tabulated after each question and followed by the quotations where they occurred.

Question 1. Does industrial arts training influence job selection?

Yes -----	12
No -----	0
Blank -----	1

"I think it does since by having had experience with the industrial arts subjects the students would be better equipped to know if he is interested in some mechanical type of work or not."

"Values of industrial arts to high school students.

1. Knowledge and understanding of the materials and processes in industry.
2. A realization that it takes more than "hands" to make something.
3. Skill of doing is increased.
4. Makes a better buying consumer.
5. Provides a chance for self-expression.
6. Correct planning and work habits are acquired.

"Industrial arts training does affect job selection."

"Industrial arts training always helps in job selection because, the boy must first have a service to sell before he can succeed in getting a job, and if he has some skill or training it will usually help him in the selection."

"I think it does to the extent that it provides a student with a bit of exploration in the industrial field before employment is contemplated. Whenever there is an abundance of work available, the student will choose according to his experience in industrial arts."

"I have known of several cases where industrial arts training has had some influence on the student's selection of jobs. In most cases it is a source of general knowledge and for the development of skill."

The teacher group was almost unanimous in their opinion that industrial arts training does influence job selection while the student group who took the training were not so positive. Twenty of the thirty-six returns from the latter group were in the affirmative.

Question 2. Should industrial arts be required of all boys?

Yes -----	6
No -----	6
Blank -----	1

"Only in the seventh and eighth grades."

"I am not sure in my own mind but, if it is required of all boys, I think it should be either in the seventh or eighth grades."

"Do not feel that it should be required of all boys."

"Yes, in junior high school General shop should also be required in high school if there is no program or if there are no requirements in junior high."

"Industrial arts should be required of all boys."

"I think the course should remain as an elective course. Not all boys have such ability or desire for industrial arts courses."

"Industrial arts is a valuable course to any prospective home maker or home owner. There is not a boy in school but what can profit much from an industrial arts course."

The feelings of the group seem to be about equally divided on this matter. It has been the writer's experience that when a course is made compulsory, the students

resent it and as a consequence probably do not do as well as they might if they selected it after being properly guided by a counselor or teacher. Whatever the answer might be, it represents a problem area for the school administrator and particularly the shop teacher.

In an effort to gain further insight into the matter of related study, the following question was included.

Question 3. Do you think that more than, or less than one-fifth of the shop class time should be spent in the study of related material?

More -----	4
Less -----	7
Blank -----	2

"We spend six out of eighteen weeks."

"I think about one-fifth of the time should be spent on related material and book study other than shop work but, certainly not more than one-fifth."

"About one-fifth of the time studying related information seems about right."

"Not over one-fifth of the shop class time should be spent in related study."

"Not less than one-fifth of the time should be for related information."

"Little can be accomplished by spending less than one-fifth of shop class time on related information."

"I think one-fifth is about the correct amount - provides enough information to make the shop work more practical when the information is applied."

There seems to be some discrepancy of opinion as to the length of time to spend in related information. The majority of the teachers (7 out of 13) thought that one-fifth of the shop time was sufficient while most of the

past students (58 out of 82) thought that more time should be spent in studying the various processes considered important to a person in industry.

Part of the trouble may be due to the failure of the recipient to recognize the fine difference between related subjects and related information. There is, after all, a limit to the amount of material that can be dispensed and assimilated within a given period: the rest must be relegated to some other class.

The opinion of the teacher group was sought in the teaching of skills with the next question.

Question 4. Should specific skills be taught in the industrial arts shop?

Yes -----	10
No -----	3
Blank -----	0

"It is fine if they can be but should not be considered as a major objective.

"I do not believe in stressing specific skills, but industrial arts more on the general shop idea, with a general education as the main objective."

"Any skills that are taught in junior high school should be properly taught, however, the development of the skill should not be carried too far - at least not as far as in a vocational program. Some people hold that some skills should be developed well enough in an industrial arts program to enable the students to hold jobs in limited areas of a trade."

"Skills should be developed in industrial arts classes if the majority of the students are using it as a terminal course in school."

"In my opinion, high school shop work should be primarily exploratory, the greatest direct value to the average boy would be in his home rather than in industry."

"Specific skills should be developed if the program is broad enough."

"No - moderate proficiency is sufficient."

Most of the teacher group (10 out of 13) think the teaching of skills is of importance particularly when the course is being used as terminal education. Inasmuch as this study is concerned with those people who do not attend college, this would appear to be sound philosophy, especially for the senior high school student. These people are near to the time when they will go into industry and/or home making, where they have need of all the experience they can command.

On the basis of the foregoing, industrial arts in the senior high school stages should become less exploratory and more technical. The value of such a course would depend on the objectives and the instructor being flexible enough to change the requirements of the time.

By using the years of experience of the teacher group, an attempt was made to determine their opinions toward the value of industrial arts training. Although this group could conceivably be prejudiced, professional integrity should warrant fair answers to the question.

Question 5. In your opinion, would boys having had industrial arts training be more desirable employees than those not having this experience?

Yes -----	12
No -----	0
Blank -----	1

"Yes, especially where there are mechanics involved."

"Everything else being equal, yes, however, attitudes can be taught in every subject though maybe in industrial arts we can do a better job because it is more like an "on the job" situation."

"It is our opinion that boys who have had good industrial arts training are more desirable employees than those not having this experience."

"All students will be better workers if they have had the opportunity to work in industrial arts shops."

"In some trades."

"Yes, because of the use of the hands."

"I would say they would be more desirable employees as through a well developed shop program, students learn habits that are essential to their success out in life, and under employment."

"Yes, they have a better appreciation of the jobs to be done, the other fellow's job, and the tools and machines of all industry."

The almost unanimous belief in the desirability of industrial arts training by the teacher group seems to corroborate the findings of this thesis.

CHAPTER V

PRESENT SCHOOL PROGRAM

Requirements and Offerings

The Field Kindley Memorial High School of Coffeyville has set up the various courses to comply with the Kansas requirements. Although the system is based on the six-three-three plan, the ninth grade work is accepted for credit towards graduation and will be included here.

The State of Kansas requires that all pupils major in English (3 years) and minor in social science (2 years), two credits of which must be U. S. government, and two credits in American history. In addition, one other major and a minor are required. Also, two credits in mathematics, two credits in a laboratory science, and two years of physical education are state requirements.

The Coffeyville Board of Education have adopted the following standards:

Ninth grade credits are included in the 34 credits (Kansas requires 32) required for graduation. Physical education counts one-fourth credit each semester, totaling two credits for four years. If four five-hour subjects are carried each year and passed, a pupil would earn eight academic credits each year and one-half credit in physical education to qualify for graduation in four years.

The high school offers study in eleven major groups. These groups are divided into courses of which the student is required to earn twenty credits and elect fourteen credits. A credit is earned in any course in which a student spends one hour per day, five days per week, for one semester.

The major groups and subjects are as follows:

<u>Subject</u>	<u>Credit</u>
1. <u>English</u>	
English 1 - 2	2
English 3 - 4	2
English 5 - 6	2
English 7 - 8	2
Journalism	2
Speech	2
Debate	2
2. <u>Foreign Language</u>	
Latin 1 - 2	2
Latin 3 - 4	2
Spanish 1 - 2	2
Spanish 3 - 4	2
French 1 - 2	2
French 3 - 4	2
3. <u>Physical Education</u>	
Gymn	1
Swimming	1
First Aid (required)	0
Driver's Education	2
4. <u>Social Science</u>	
World History	2
Social Science	2
American Government	2
Family Living	2

5.	<u>Mathematics</u>	
	Algebra	2
	Geometry	2
	Mathematics Review	2
	Consumers Mathematics	2
6.	<u>Music</u>	
	Band	1
	Orchestra	1
	Chorus	1
	Drum Corps	1
	Glee Club	1
7.	<u>Science</u>	
	Biology	2
	Physics	2
	Chemistry	2
	Radio	2
	General Science	2
8.	<u>Commercial Subjects</u>	
	Consumers Mathematics	2
	Business Arithmetic	2
	Bookkeeping	2
	Typing	2
	Stenography	2
	Business English	2
	Office Practice	4
	Distributive Education	3
9.	<u>Art</u>	
	Art (Painting)	2
	Crafts	2
	Advanced Art	2
10.	<u>Industrial Arts and Vocational</u>	
	Electricity	2
	Woodworking	2
	Drafting	2
	General Shop 1 - 2	2
	General Shop 3 - 4	2
	Home Mechanics	2
	Voc. Auto Mechanics	6 or 8
	Voc. Machine Shop	6
	Voc. Agriculture	2

11. Home Economics

Foods 1 - 2	2
Foods 3 - 4	2
Clothing 1 - 2	2
Clothing 3 - 4	2

There are no courses of study. Each pupil builds his own curriculum taking into account the above requirements, and in addition, earning two majors and two minors, and pursuing study in no less than five different groups to be selected from the foregoing list.

Each student is required to major in English and social science. Family living is a local requirement and counts toward a social science major. As a consequence each graduate has eight credits (require) in this one group.

The course in first aid does not carry credit, but all students are required to earn a certificate.

Offerings and Demand for Industrial Arts

Listed under Industrial arts and Vocational are five subject areas from which a student may select. For purposes of clarification, these subjects are listed with the number of class periods that they are offered.

<u>Subject</u>	<u>No. of Periods Offered</u>
Electricity	1
Woodworking	2
Drafting	4
General Shop 1 - 2	4
General Shop 3 - 4	1
Home Mechanics	4
Total	<u>16</u>

The demand for industrial arts has fluctuated considerably over the last ten years but has shown a tendency to stabilize. More recently, there has been a definite upward trend.

The fluctuation was probably caused more by lack of offerings than by demand. During the period of 1942-43, the school was serving as a war training school, operating twenty-four hours per day. In such cases where facilities are limited, some phase of the program must be curtailed or dropped completely.

The following table, based on the years 1942-53 shows this to be true.

TABLE I

INDUSTRIAL ARTS ENROLLMENT COMPARED TO
TOTAL SCHOOL ENROLLMENT

Year	No. of Students in High School ⁸	No. Taking Industrial Arts ⁹	Per Cent
42-43	944	75	7.9
44-45	801	214	26.7
46-47	789	121	15.5
48-49	758	131	17.1
50-51	772	217	28.1
52-53	726	235	32.6

⁸"Superintendent's Progress Report" (Annual Report, Coffeyville Public Schools, 1953).

⁹"Report to the Superintendent" (Annual Report, McFarland Trade School, 1942-1953).

It will be noted that during the period of 1942-43, there were only seventy-five industrial art students. During that same period, one thousand four hundred and ten special students were processed, junior college students excepted. Ten years later there were two hundred and thirty-five industrial art students and only one hundred and seven special students being served.¹⁰

Two courses, namely home mechanics and general shop, were added to the curriculum in 1950 and probably account for the increase in that period.

Girls may enroll in any industrial arts course of their choice, however they have participated only in the home mechanics course to date.

The training facilities have been adequate for those enrolling at the regular time, but classes have been operating so near to maximum capacity that any late enrollee finds it extremely difficult to gain admittance.

Table I, page 37, shows an almost steady decrease in the number of students in high school and at the same time a definite increase in the number taking industrial art subjects. If one may assume that the ratio will level off at approximately thirty per cent, the future trend could be approximated.

Figure 3, page 39, shows the present enrollment compared to a projection through 1965. It is based on the

¹⁰"Report to the Superintendent" (Annual Report, McFarland Trade School, Coffeyville, Kansas, 1953), p. 7.

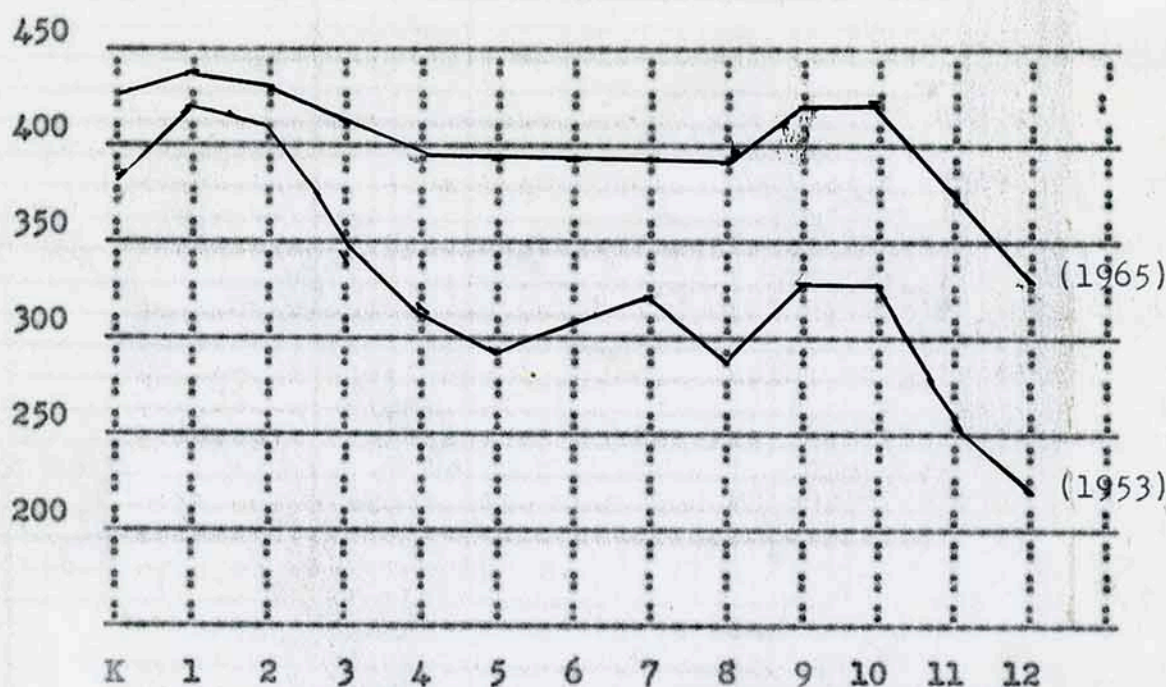


Figure 3. ENROLLMENT TODAY COMPARED
TO A PROJECTION THROUGH 1965¹¹

assumption that families now having children in grade schools will remain in the city until the children are graduated from high school.

Figure 3 anticipates four hundred and ten students in the tenth grade, three hundred and sixty in the eleventh, and three hundred ten in the twelfth grade. This would bring the total to one thousand and eight. Going on the assumption that thirty percent take industrial arts, it would indicate that enrollment in that department would increase to three hundred and twenty-four students by 1965.

¹¹The Coffeyville Daily Journal Progress Edition,
February 28, 1954, p. 5.

CHAPTER VI

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

The purpose of this study was to find the value of industrial arts training to the students of Coffeyville, Kansas.

The word, "value", is broad in its meaning and has need of clarification. The connotation used here is that of usefulness.

A program to be of value must in some measured way, be advantageous to an individual and to the society of which he is a part.

In the preparation for this study, a group of questions were set up as a basis to measure the success of the program and to indicate the necessity for change of the present program.

In order to present the results of the study in an easy to follow sequence, each question will be stated as a definitive introduction to the area of discussion.

Question 1. What is the value of industrial arts in procuring a job?

One of the first problems of an individual embarking into the area of after school life is that of finding and obtaining a job which appeals to him and one in which he physically, economically and socially qualified to work

The importance of preparation for this change in the order of living for these people appears to be foremost in the minds of all who work with our young folk. For instance, Pierce in writing his book on the high school curriculum states that:

No enumeration of the important functions of high class living could be made without the inclusion of work....Though its nature and influence change, work remains a significant and frequently dominating factor.¹²

When this question was put to the teachers of Kansas, they responded unanimously in the affirmative. (p. 27) Although this question was not asked directly of the past student group, they, of their own free will made such statements as: it should be required of all boys; all schools should teach it; important training to all boys; etc. (p.20) When as many people feel as these do, one cannot doubt the value of industrial arts training to everyone, not only in the procuring of a job, but for any reason.

Question. 2. What jobs can students expect?

No attempt will be made to list the specific job titles of the several thousand in the thirty industries in Coffeyville.

Students may enter any of the positions classed as unskilled and semi-skilled with the training provided in a

¹²Paul R. Pierce, Developing A High School Curriculum. (New York: American Book Company, 1942), p. 291.

well-rounded industrial program. It seems highly probable that they would have preference over other applicants since the employers feel that the training would eliminate the necessity of a complete break-in of a new employee. This is a matter of dollars and cents since the quicker a man starts producing, the quicker he becomes an asset to the company. To further enhance the position of the industrial arts graduate is the almost unanimous preference for a person with broad general training rather than specific training.

In view of the returns, it appears that these students could definitely expect to enter these jobs at a higher standing than applicants not having this experience.

Question 3. What is the average beginning pay?

This question has been discussed at some length in the text. (Chapter IV - Questions 5 - 6 - 7) The findings showed the industrial arts student to have a twenty-nine and four-tenths cents per hour higher beginning salary than the other group. This advantage is a continuous one in that the present salary of the industrial arts group is thirty-one cents per hour higher.

The findings in the area of monetary return are most encouraging and lend proof to the theory that industrial arts training does have occupational implications.

Question 4. What are the possibilities for advancement on the job?

Returns from the past student group showed that the industrial art student spent an average of ten year, six and five-eighths months on the same job, while the other group averaged thirteen years, six and eight-tenths months, or three years and two-tenths months longer on a given job.

The writer recognizes the possibility of two conclusions from the findings. Since neither can be proved or disproved, no definite statement can be made in answer to the foregoing question.

Question 5. What, if any, influence does industrial arts have on vocational choice?

Although slightly over half of the people questioned confessed that the training influenced them in the selection of a job, this is not considered to be conclusive.

The possibility that the number of courses taken might bear a relation to the influence on job selection was checked but did not prove to be true.

Certain people may have been so influenced by the course, the instructor, or their own ability and preference, that the job selected was based on this predilection.

Only the assumption that some people are influenced to a varying degree by the training can be made.

Question 6. What industrial arts subjects appear to be most helpful?

No particular course may stand as the best since it would be impossible for any one shop to parallel the work

of all jobs. In general, the findings were in favor of a general course to be followed by a period of more specialized training.

Question 7. Is there a need for more industrial arts courses?

A substantial majority of those questioned were in favor of additional courses.

Question 8. What industrial arts courses are suggested?

Although a large number were in favor of adding courses to the curriculum, few were very clear on the additions to be made. Most of the suggestions, from the writer's point of view, were of a vocational nature. There is a possibility that the recipients may have had the idea that only the basic fundamentals would be sufficient. If this be true, the field of industrial arts would most certainly be expanded beyond its presently conceived limits.

Question 9. How much time should be spent in the shop?

A few persons were content with the present one hour period, but most felt the necessity of more work experience and suggested that two hours per day would be preferred. Only a very few were of the opinion that three hours were necessary.

To attempt to carry out the findings of this thesis would most definitely be an administrative nightmare. At a time when the student load is increasing and the number of available teachers is decreasing, these people want the

school to offer more courses, increase the time from one period to two, which would cut the possible number of students in half or double the facilities, and while doing all this, decrease the operating budget.

Question 10. How much related reading material should be given?

Two groups were asked this question directly. The teachers expressed the opinion that not more than one-fifth of the time allotted to shop work should be spent in any other activity.

The past student group felt the need for more work in this field.

There is considerable probability that the present time allotment to the study period is adequate, but since the student does not see the immediate need, he either does not learn or retain the information until the need does arise.

Question 11. What is the feeling of employers toward industrial arts training?

All employers contacted in the study highly recommended the program and encouraged its continuation and expansion.

Question 12. What skills are needed?

As could be expected, the employers were more interested in the skills that related expressly to their type of work. However, all were in favor of broad general training.

The teacher should direct his efforts in as many directions as possible and recommend more work in a given area to any student showing particular aptitude or skill in that area.

Conclusions

The Industrial Arts curriculum, while fulfilling its part in general education is providing adequate training to qualify its graduates for entry into some sixty per cent of the jobs within the city. Besides qualifying for these jobs, the students have been able to obtain and maintain higher salary standards than their competitors.

All students in the past have received an adequate, varied program, but with the enrollment increasing now and the expectations for it to continue for at least ten to twelve years, the present program must be expanded gradually. Although the physical facilities are believed to be large enough to house the added enrollment, plans should be made for hiring more teachers and increasing the budget to take care of the added expenses of operation.

The present program is meeting the needs of industry now, but could be improved with slight changes. Both agencies would definitely benefit from a program worked out jointly between committees with representatives from both bodies.

There is a definite need for a vocational guidance program or a coordinator with time to serve properly the

school and industry. His duties would be to maintain the program set up through the joint committees, provide occupational information, screen students, council trainees, and help in placement and follow-up services.

There are definite occupational implications direct and implied in the industrial arts program studied.

Recommendations

On the basis of the foregoing study, the following recommendations are made to bring the present program in line with the community needs.

1. Establishment of a ninth grade general shop course to be required of all students.
2. Provide as many classes of industrial arts general machine shop as are necessary.
3. Provide industrial arts auto mechanics.
4. Establish a related information class to be required of all students taking industrial arts.
5. Establish a joint industry-school committee.
6. Provide an audio-visual library.
7. Appoint a public relations committee to encourage more students to take industrial arts and to keep the public informed.

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APPENDIXES

APPENDIX A

September 15, 1953.

Dear Sir:

In making a study of the job possibilities for students of industrial arts, the most logical source of information would be from those who have had one or more courses and are now working at a trade. It is for this reason that you are being contacted and it is hoped that you could find a few minutes to devote to filling in the attached questionnaire.

You may be assured that all information given will be held in the strictest confidence.

This study, in its final form, should give some idea of the opinions and suggestions of our past students on topics bearing on our school program.

Your part in this study is important. Each figure added to the total affects the average score. We trust that your information will be as accurate as possible.

The return of the completed questionnaire by September 20th will be of significant aid.

Your help is deeply appreciated.

Sincerely yours,

George W. Koon, Instructor
McFarland Trade School

APPENDIX B

INFORMATIONAL QUESTIONNAIRE FOR PAST INDUSTRIAL ARTS STUDENTS

Name _____ Place of Work _____

Job Title _____

DIRECTIONS: The questions which will follow serve as an inventory of your experiences and attitudes toward Industrial Arts. Please answer all questions carefully and thoughtfully. Write answers in the space provided.

1. Did you take any industrial arts subjects while in school? Yes _____ No _____
2. Check the subjects you have taken.

A. Woodworking _____	E. Sheet Metal _____	I. Crafts _____
B. Drawing _____	F. Electricity _____	J. Printing _____
C. General Shop _____	G. Machine Shop _____	K. Others _____
D. Auto Mechanics _____	H. Art _____	
3. Which of the above subjects helped you the most? _____ the least? _____
4. Did Industrial Arts influence you in the selection of your job? _____
5. What was your starting salary? _____ per hour.
6. How long have you worked at your present job? _____ yrs. _____ mos.
7. What is your present salary? _____ per hour.
8. Do you consider industrial arts good training for all boys? _____
9. Do you think the school should offer more industrial arts subjects? _____
10. If number nine is "yes", what additions would you suggest? _____
11. Do you consider industrial arts projects as good training? _____, a waste of time, _____ some of each? _____
12. Do you think there should be more _____, less _____, or no _____ reading material in connection with shop work? _____

13. How much time do you think should be spent in shop work per day? one hour____ two hours____ three hours ____.
14. Do you think your industrial arts experience helped you on your job? _____
15. Comments on your experience with or attitude toward Industrial Arts.

APPENDIX C

Dear Sir:

You are being contacted, along with the heads of other manufacturing concerns, for an opinion in regard to the significance of industrial arts training to you and your employees.

Would you kindly express your opinion on the following questions?

- A. Do you believe that industrial arts training could eliminate some, "on the job," training?
- B. What knowledge of materials, processes and jobs do you think would make for a more desirable employee?
- C. What skills should be promoted?
- D. Would you prefer an applicant trained in specific skills or one with broad general training?

The opinions you express will be used in a study to determine the value of the industrial arts program in the Coffeyville school system. Your name will not be used.

A self addressed envelope is enclosed for your convenience.

The attention given this matter is hereby gratefully acknowledged.

Sincerely yours,

George W. Koon, Instructor
McFarland Trade School

APPENDIX D

Dear Sir:

You are being contacted along with certain selected educators in the field of industrial arts.

Would you kindly express your opinion of the value of industrial arts training to those students who terminate their education at or below the high school level.

The following questions might serve as a guide to your thinking:

- A. Does industrial arts training influence job selection?
- B. Should industrial arts be required for all boys?
- C. Do you think that more than or less than one-fifth of the shop class time should be spent in the study of related material.
- D. Should specific skills be well developed in industrial arts shop?
- E. In your opinion, would boys having had industrial arts training be more desirable employees than those not having this experience?

A self addressed envelope is enclosed for your convenience.

The return of this information by November 30, 1953, would be very helpful.

Sincerely yours,

George W. Koon, Instructor
McFarland Trade School
Coffeyville, Kansas