A STUDY OF FACTORS THAT COULD BE INFLUENTIAL IN THE SELECTION OF STUDENTS FOR ENTRANCE INTO INDUSTRIAL ARTS PROGRAMS IN JUNIOR HIGH SCHOOL

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CHAPTER I

INTRODUCTION

Industrial arts seems to be facing a period of crisis that could result in its becoming of minor importance in education. The Vocational Act of 1963 and its subsequent amendments have devitalized the vocational role of industrial arts in many communities.[1]

This development leaves industrial arts free to identify itself with a new and more effective role in the area of education. As one study stated:

> Industrial arts, as an integral part of the total program of education from kindergarten through higher education, provides unique opportunities for students to participate in representative experiences in industrial occupations and processes.[2]

However, teachers today are confronted with the problem of finding ways for qualified students to take industrial arts. One educator stated the problem in the following way:

> A major problem facing educators and counselors is how to help students develop vocational or educational goals when the knowledge and experience of these young people

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[1]Donald Maley, "Into the Mainstream," American Vocational Journal, XLV (February, 1970), p. 42.

[2]"Report of the Ad Hoc Committee on Criteria and Guidelines for Funding Industrial Arts," School Shop, XXXI (January, 1972), p. 26.

is too limited to provide a basis for evaluating the possibilities.[3]

The need for an effective means of selecting qualified students for industrial arts courses brought about the need for the study.

Statement of the Problem

Students in junior high school often seem to be enrolled in classes for which they have little aptitude and in which they have little interest. This kind of situation results in a waste of the students' time as well as the instructors'.

Believing that industrial arts is an important part of education, an important aspect of learning how to live and work in a complex industrial society, the author chose to undertake a study of factors that could be helpful in the selection of students for entrance into industrial arts programs in junior high.

Many times students who have no interest or aptitude enroll in industrial arts classes. This causes the classes to become overloaded which creates more problems. First, it creates the problem of having students in industrial arts classes that do not belong there. Second, it limits the time that the instructor has to work with the students who do have the interest and aptitude for such training.

This study was an attempt to compile a list from data gathered that would make available for counselors a reliable source of the significant factors, internal and external, which may influence a student's success where industrial arts is concerned.

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[3]Richard C. Johnson, "Simulation Techniques in Career Development," American Vocational Journal, XLV (September, 1970), p. 30.

The instruments usually used by counselors to help place students in industrial arts courses are the standardized tests. However, according to a study done at New York University:

> It seems evident that the use of certain standardized tests, or revisions of these tests, may be meaningful as a factor in the prediction of student success but that this approach should not be used as a sole guide or determinant.[4]

Purpose of the Study

The purpose of the study was to identify and evaluate the many factors which could influence a student's success or failure if he enrolled in industrial arts.

The proper use of the findings of the study by counselors would help students make wiser choices where industrial arts is concerned and would influence a more qualified number of students to familiarize themselves with the variety of training available in industrial arts.

Hypotheses

Based on information found in a review of literature pertaining to factors which influence students in making educational choices the following hypotheses were adopted for the study:

> The type occupation of the father makes no difference on a student's level of success in industrial arts.
>
> The type occupation a student desires for the future makes no difference on his level of success in industrial arts.
>
> The type hobbies, activities, subjects, and magazines liked by a student makes no difference on his level of success in industrial arts.

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[4] New York University, New York, (Published ERIC Document, ED 038 494, 1969), p. 171.

Grade average category in subjects other than shop and attitude toward school make no difference on a student's level of success in industrial arts.

Attitudes maintained by a student toward activities related to industrial arts lab make no difference on his level of success in industrial arts.

Location in which a student likes to work will make no difference on his level of success in industrial arts.

Person influencing a student to take industrial arts makes no difference on his level of success in industrial arts.

Assumption

A basic assumption of the study is that students in junior high do not choose classes in industrial arts without being influenced in their choice by certain factors.

Definition of Terms

The following definitions have been compiled to explain the use of certain words as they pertain to this study.

1. Outside influence - Any factor or factors which have an effect on the student's probable success in industrial arts lab classes.
2. Success in industrial arts lab - A grade of "C" or above in industrial arts lab class.
3. Level of success - Grades of A, B, or C; A being the highest while C is the lowest level.

Limitations of the Study

The study was limited to the seventh and eighth grade male students enrolled in a junior high school's industrial arts lab classes. This limitation was for the purpose of identifying the

students that were entering industrial arts courses for the first time. The reason for choosing these students was to obtain information while it was still fresh in their minds concerning factors that could have an effect on success in shop classes after enrollment in industrial arts lab.

CHAPTER II

REVIEW OF LITERATURE

Literature on helping students in making educational or vocational choices is quite prevalent. However, it has not been an attempt of the author of this study to expand on this literature. A student runs into many problems when making a choice of courses to be taken in junior high and the possibilities offered by industrial arts are not to be overlooked. The student often needs help in making his decision, but many problems are encountered in the task of helping him make a decision. For example, as one author stated:

> Thus, it is imperative that individual counselors consider both the characteristics of students making choices as well as the personal and social contexts in which choices are made.[1]

It is evident from the above quotation that leaving off the personal and social contexts of decision making would lead to placing a student in a class where he need not be. This feeling that factors influencing choices of educational goals should not be overlooked is conveyed in the following statement:

> Therefore, we bend our efforts to increase the student's understanding of the factors involved in choice so that

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[1] Edwin L. Herr, "Guidance and Vocational Aspects of Education: Some Considerations," The Vocational Guidance Quarterly, XVII (March, 1969), p. 178.

he can explore his options in a systematic and comprehensive way.[2]

The problems encountered in helping students in making educational choices are many. The above was only a sample of one type of problem. Because of the many possible factors involved in making an educational choice one can see that students need help in this process. Counselors, in this case, need to know what the factors are that influence students in making a choice where industrial arts is concerned.

Perhaps more study on factors that influence students in their choice to take industrial arts would assist counselors in helping students make wiser decisions.

Included in this review of literature is a discussion of four research studies which are related to the present study. One study was done to develop an efficient and reliable evaluation instrument and procedures that could be used in the prediction of success in trade electricity and machine shop courses on the secondary level. This study found that the use of standardized tests was good criteria to use for prediction but that they should not be relied on solely without other instruments or modification.[3]

The present study used the results of the New York University study to formulate the main idea for the study which is to provide another instrument for counselors to use when helping students make a

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[2]Martin R. Katz, "Career Guidance: Expanding the Student's Decision Making Power," The Bulletin of the National Association of Secondary School Principals, LIV (May, 1970), p. 95.

[3]New York University, New York, (Published ERIC Document, ED 038 494, 1969), p. 171.

decision on whether to take industrial arts.

Another study sought to discover what influenced freshman students in engineering at the University of Minnesota Institute of Technology in their vocational choices. Out of 579 students surveyed it was found that over two-thirds of the students were influenced in their vocational choices by counselors, teachers, parents, or others.[4]

Although the purpose of this study was different from the one to be undertaken, the findings were important to the present study. They showed that teachers, counselors, and parents are factors which influence a student's choice of what courses he would take. There will be questions to test these factors on the questionnaire of the present study.

A third study was done at the Thomas J. Rush Junior High School in Dallas, Texas. It tested factors that influence students' choices in electing to take industrial arts. Although the purpose of this study was different than the present one, it gave a background for the method of research to be used and helped in formulating the questionnaire to be used in the present study. The study also showed that counselors and teachers were of less influence than others such as parents in helping students make course choices.[5]

A fourth study was done which was relevant to the present study because of the similarity but with a different purpose. It also found that counselors and teachers has less influence on a student's educa-

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[4]Donivan J. Watley, "Student Decisions Influenced by Counselors and Teachers," The Vocational Guidance Quarterly, XV (September, 1966), p. 37.

[5]Bradley A. Washington, (Unpublished M. S. thesis, Oklahoma State University, 1962), p. 86.

tional choices than did other factors.[6]

Lacy's and Washington's findings helped to formulate the hypotheses. It is expected that the results found by the present study will be different from the previous studies because of the different geographic location and the many advancements which have been made in vocational guidance counseling.

It is hoped that whatever the results of the study indicate, that it will assist the participating school to help students make better decisions as they consider taking industrial arts. By knowing the factors that influence students in their decisions, counselors and teachers will be better able to help a student who might otherwise make an unwise choice of classes. Also, the counselors and teachers can attack the problem of over-crowded industrial arts classrooms by encouraging those not actually qualified for industrial arts to take something better suited for them.

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[6]Leon Lacy, (Unpublished M. S. thesis, Oklahoma State University, 1958), p. 3.

CHAPTER III

METHOD OF RESEARCH

For the purpose of finding the factors that could have an influence on a student's success in industrial arts courses, it was decided to use a questionnaire. The questionnaire used was patterned after questionnaires used in a similar study done for a Dallas school.[1] However, there were some minor revisions made. The questions in the final form were checked by experts in the field of research.

Each male student at the school that was taking or had taken shop (205 divided between the seventh and eighth grades) was asked to answer a questionnaire. The questionnaire was administered about one month after school began January 4, 1972. Help in administering the questionnaire was obtained from fellow graduate students in the field of education. The place of administration was in the physical education classes at the school at which time the experimenters, for a one day period, were given complete control of these classes. However, before the questionnaire was administered two girls at the school were asked to answer one each for the purpose of establishing the time needed to administer the questionnaire to the boys. It was found that approximately 25 minutes was the time required for administration of the questionnaire.

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[1] Bradley A. Washington, (Unpublished M. S. thesis, Oklahoma State University, 1962), p. 97.

The administration of the questionnaire was done by dividing each class into those students that were taking or had taken shop and those that had not taken shop. Each experimenter was given a copy of instructions for administering the questionnaire to read before he administered the questionnaire to those students that had industrial arts lab experience. The directions for the students and the questionnaire were then read aloud in their entirety to the students. This was done for the purposes of making each instruction and question clear, elimination of problems with those students that have trouble reading, and for better utilization of the time allowed for each class period. After each question time was allowed for the students to mark their replies.

The data from the questionnaire was tabulated and compared under seven main areas: (1) Occupation of father; (2) Desired future occupation of student; (3) Attitudes concerning activities related to industrial arts lab; (4) Average academic grades; (5) Hobbies, activities, subjects, and magazines liked by the student; (6) Location in which a student likes to work; and (7) Person influencing a student to take industrial arts. From the results tabulated after the questionnaire was completed by the students the researcher tested his hypotheses and made his conclusions and recommendations.

CHAPTER IV

PRESENTATION AND ANALYSES OF DATA

Introduction

The purpose of this study was to determine if there are significant differences in selected characteristics of students enrolled in industrial arts courses in junior high school. Specifically, the students selected for the study were those that had been or were enrolled in industrial arts courses.

Data for the study was collected by means of a questionnaire which was administered to 205 students with industrial arts experiences.

Data treated were of such a nature that analyses by non-parametric statistical tests were deemed appropriate. The statistical test used was the chi-square test of goodness of fit. Frequency counts and percentages comparing students on the selected characteristics are shown in various tables. Not all students responded to every item on the questionnaire since all items did not apply to all students and because for unknown reasons, students did not respond to different items.

Occupational Classification of Fathers

Data relating to the occupational classification of fathers were placed in categories devised by the U. S. Department of Labor.[1] Of the students responding in each of the three levels of success in industrial arts, 54.6 percent of the A level, 52.3 percent of the B level, and 47.6 percent of the C level reported that their fathers' occupations were of the professional, technical, and managerial category. The students reported that 13.6 percent, 17.4 percent, and 4.8 percent, respectively, of their fathers were of the service occupational category. The students further reported that 14.8 percent, 8.2 percent, and 19.0 percent, respectively, of their fathers were of the processing occupational category. The percent responding to the other categories were relatively close except for the machine trades category where the percentage increased with the lower levels of success in industrial arts. The A level (5.7 percent), B level (9.3 percent) and C level (14.3 percent) indicated that their fathers engaged in machine trade occupations.

Yield of a chi-square value of 14.94 with fourteen degrees of freedom was not judged significant at the .05 level. Therefore, the null hypothesis that the type occupation the father has makes no difference on a student's level of success in industrial arts was accepted.

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[1] "Definition of Titles," Dictionary of Occupational Titles (Washington, D. C., 1965), I, 17.

TABLE I

FATHER'S OCCUPATION BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Occupational Categories	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Professional, technical and managerial	48	54.6	45	52.3	10	47.6
Clerical and Sales	4	4.5	2	2.3	0	0.0
Service	12	13.6	15	17.4	1	4.8
Farming, fishery, forestry, and related	1	1.1	5	5.8	1	4.8
Processing	13	14.8	7	8.2	4	19.0
Machine trades	5	5.7	8	9.3	3	14.3
Benchwork	0	0.0	1	1.2	0	0.0
Structural	5	5.7	3	3.5	2	9.5
Total	88	100.0	86	100.0	21	100.0

Chi-square = 14.94 X^2 at .05 level = 23.68

Desired Future Occupational Categories of Students

An analysis of desired future occupational engagement of the students participating in the study is presented in Table II. Comparison of the percentage of students in each of the three levels of success who responded to the occupational areas revealed that the largest percentages were in the professional, technical, and managerial

occupational category. The A level reported 70.6 percent, the B level reported 60.0 percent, and the C level reported 60.0 percent in this category. The percentages in the other categories were small and relatively similar.

TABLE II

STUDENT'S DESIRED FUTURE OCCUPATION BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Occupational Categories	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Professional, technical and managerial	48	70.6	40	60.0	9	60.0
Service	7	10.3	4	5.9	1	6.7
Farming, fishery, forestry, and related	4	5.9	8	11.9	0	0.0
Machine trades	4	5.9	4	5.9	1	6.7
Benchwork	0	0.0	2	2.9	1	6.7
Structural work	0	0.0	5	7.5	2	13.2
Miscellaneous	5	7.3	4	5.9	1	6.7
Total	68	100.0	67	100.0	15	100.0

Chi-square = 14.68 X^2 at .05 level = 21.03

A chi-square value of 14.68 with twelve degrees of freedom was found not significant at the .05 level. The null hypothesis that the type occupation a student desires for the future makes no difference on his level of success in industrial arts was accepted.

Attitudes Toward Activities Related to Industrial Arts Lab

Tables III - XIV present an analysis of attitudes related to industrial arts activities such as those that are concerned with work, machines, building, and repairing. Tables III - VI pertain to a set of activities given the students to respond to by picking four and numbering them according to importance; Table III is the first choices compared; Table IV is the second choices, etc. Tables VII - X are a second set of activities where the students were asked to do the same things again. On the other hand, Tables XI - XIII are a list of a third set of activities, but the students were to respond by choosing three and numbering them according to importance. The successive tables are the choices compared as in the previous two sets. Table XIV is a listing of three activities in which the students were to answer yes or no.

Table III is an analysis of the first choices of a grouped set of activities related to industrial arts labs. Comparison of the percentages of students in each of the three success levels reveals that 27.2 percent of the A level, 13.2 percent of the B level, and 23.8 percent of the C level like to know why things work. There were five other activities where there were fairly large differences in the percentages in at least one of the levels of success. They were:

(1) Like to put things together (A level 16.3 percent, B level 15.2 percent, and C level 23.8 percent); (2) Like to experiment (A level 10.8 percent, B level 10.7 percent, and C level 4.8 percent); (3) Like to work on different kinds of things (A level 6.5 percent, B level 15.2 percent, and C level 4.8 percent); (4) Like to follow directions (2.2, 3.3, and 9.5 percent respectively); (5) Like to work with people (12.0, 16.3, and 9.5 percent, respectively).

TABLE III

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET I, FIRST CHOICES

First Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Know why things work	25	27.2	12	13.2	5	23.8
Make things work	15	16.3	18	19.6	4	19.0
Put things together	15	16.3	14	15.2	5	23.8
Experiment	10	10.8	10	10.7	1	4.8
Work on different kinds of things	6	6.5	14	15.2	1	4.8
Follow directions	2	2.2	3	3.3	2	9.5
Figure things out	7	7.6	6	6.5	1	4.8
Work with people	11	12.0	15	16.3	2	9.5
Write about things	1	1.1	0	0.0	0	0.0
Total	92	100.0	92	100.0	21	100.0

Chi-square = 14.82 X^2 at .05 level = 26.30

A chi-square value of 14.82 with sixteen degrees of freedom was found to be insignificant at the .05 level. For this first choice comparison, the null hypothesis that attitudes maintained by a student toward activities related to industrial arts makes no difference on his level of success in industrial arts was accepted.

An analysis of the second choices of the activities Tables III - VI represent is presented in Table IV. Percentage comparison of students in the three levels who responded show that the greatest differences were in the activities of liking to know why things work (A level 12.0, B level 19.5, and C level 9.5 percent); liking to experiment (21.7, 13.0, and 33.3 percent respectively); liking to follow directions (2.2, 0.0, and 0.0 percent, respectively); and liking to figure things out (16.3, 13.2, and 0.0 percent, respectively). The other responses were found to be very similar.

However, a chi-square value of 16.62 with sixteen degrees of of freedom was found insignificant at the .05 level. Therefore, the null hypothesis that attitudes maintained by a student toward activities related to industrial arts make no difference on his level of success in industrial arts was again accepted.

TABLE IV

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET I, SECOND CHOICES

Second Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Know why things work	11	12.0	18	19.5	2	9.5
Make things work	17	18.5	17	18.5	4	19.0
Put things together	14	15.2	18	19.5	4	19.0
Experiment	20	21.7	12	13.0	7	33.3
Work on different kinds of things	4	4.3	8	8.7	2	9.5
Follow directions	2	2.2	0	0.0	0	0.0
Figure things out	15	16.3	12	13.2	0	0.0
Work with people	5	5.5	6	6.5	1	4.8
Write about things	4	4.3	1	1.1	1	4.8
Total	92	100.0	92	100.0	21	100.0

Chi-square = 16.62 X^2 at .05 level = 26.30

Table V presents an analysis of the third choices of the students pertaining to the activities represented by Tables III - VI. Comparison of percentages of the students in the three success levels brought forth that the largest percentage of the A level students liked to put things together (25.0 percent). The largest percentage of B level students chose this activity also (19.6 percent). On the other hand, the largest percentage of C level students liked to work on different kinds of things (28.5 percent). The responses to the rest of the categories were quite similar.

TABLE V

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET I, THIRD CHOICES

Third Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Know why things work	7	7.6	7	7.6	0	0.0
Make things work	13	14.1	14	15.2	3	14.3
Put things together	23	25.0	18	19.6	3	14.3
Experiment	9	9.8	16	17.4	3	14.3
Work on different kinds of things	10	10.9	9	9.8	6	28.5
Follow directions	3	3.3	3	3.3	0	0.0
Figure things out	16	17.4	10	10.9	4	19.0
Work with people	5	5.4	13	14.0	1	4.8
Write about things	6	6.5	2	2.2	1	4.8
Total	92	100.0	92	100.0	21	100.0

Chi-square = 14.74 X^2 at .05 level = 26.30

A chi-square value of 14.74 with sixteen degrees of freedom was found to be insignificant at the .05 level on comparison of third choices. The null hypothesis that attitudes maintained by a student toward activities related to industrial arts lab make no difference on his level of success in industrial arts was again accepted.

An analysis of the fourth choices of the students toward the group of activities represented in Tables III - VI is presented in Table VI. Upon comparison of the percentage of responses to the activities it was found that 7.6 percent of the A level, 8.7 percent of

the B level, and 0.0 percent of the C level students liked to put things togehter. The other major differences were in the activities of working with people (14.1, 7.6, and 9.5 percent, respective of level); and liking to write about things (7.6, 6.5, and 14.3 percent, respectively). All other comparisons are quite similar.

TABLE VI

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET I, FOURTH CHOICES

Fourth Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Know why things work	6	6.5	7	7.6	1	4.8
Make things work	8	8.7	7	7.6	2	9.5
Put things together	7	7.6	8	8.7	0	0.0
Experiment	14	15.2	13	14.1	3	14.3
Work on different kinds of things	18	19.6	19	20.7	5	23.8
Follow directions	3	3.3	7	7.6	1	4.8
Figure things out	16	17.4	18	19.6	4	19.0
Work with people	13	14.1	7	7.6	2	9.5
Write about things	7	7.6	6	6.5	3	14.3
Total	92	100.0	92	100.0	21	100.0

Chi-square = 7.65 X^2 at .05 level = 26.30

However, a chi-square value of 7.65 with sixteen degrees of freedom was found to be insignificant at the .05 level. The null hypothe-

sis was again accepted.

Table VII presents an analysis of data among the first choices of the respondents in a second group of attitudes toward activities related to industrial arts lab. Comparisons of percentages of the three success levels who responded to the activities found a difference in the percentage of students responding to the different activities. For example, pertaining to the activity of liking to do a job correctly, 27.2 percent of the A level, 35.0 percent of the B level, and 19.0 percent of the C level students responded to this as a first choice. Also, pertaining to the activity of liking to keep clean, 5.4 percent of the A level, 2.2 percent of the B level, and 14.3 percent of the C level students chose this as a first choice response.

Yield of a chi-square value of 34.63 with eighteen degrees of freedom was found to be significant at the .05 level. Therefore, it was judged that the attitudes a student maintains toward activities related to industrial arts lab for the first choice comparison of this set of activities does make a difference in his level of success in industrial arts.

TABLE VII

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET II, FIRST CHOICES

First Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Make tool racks	5	5.4	4	4.3	2	9.5
Work with your own tools	17	18.5	20	21.7	2	9.5
Work	12	13.0	7	7.6	3	14.3
Keep clean	5	5.4	2	2.2	3	14.3
Work in a clean place	0	0.0	5	5.4	0	0.0
Wear work clothes	4	4.3	5	5.4	2	9.5
Get dirty	22	24.0	7	7.6	4	19.0
Do a job correctly	25	27.2	32	35.0	4	19.0
Keep tools and machines oiled	1	1.1	4	4.3	1	4.9
Be neat	1	1.1	6	6.5	0	0.0
Total	92	100.0	92	100.0	21	100.0

Chi-square = 34.63 X^2 at .05 level = 28.87

Analysis of the second choices pertaining to activities related to industrial arts represented by Tables VII - X is presented in Table VIII. The percentages of the students in the three success levels reveal that they were quite similar in comparison to most of the activities except in the cases of liking to work (9.8 percent of the A level, 16.3 percent of the B level, and 9.5 percent of the C level); and of liking to do a job correctly (25.0 percent, 14.1 percent, and 19.1 percent, respectively).

TABLE VIII

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET II, SECOND CHOICES

Second Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Make tool racks	4	4.3	5	5.4	2	9.5
Work with your own tools	7	7.6	8	8.8	2	9.5
Work	9	9.8	15	16.3	2	9.5
Keep clean	4	4.3	6	6.5	0	0.0
Work in a clean place	7	7.6	4	4.3	3	14.4
Wear work clothes	7	7.6	16	17.4	2	9.5
Get dirty	9	9.8	10	10.8	2	9.5
Do a job correctly	23	25.0	13	14.1	4	19.1
Keep tools and machines oiled	12	13.2	8	8.8	2	9.5
Be neat	10	10.8	7	7.6	2	9.5
Total	92	100.0	92	100.0	21	100.0

Chi-square = 14.95 X^2 at .05 level = 28.87

A chi-square value of 14.95 with eighteen degrees of freedom was not significant at the .05 level. The null hypothesis that attitudes maintained by a student toward activities related to industrial arts lab make no difference on his level of success in industrial arts was accepted.

Table IX presents an analysis of the third choices of the students pertaining to the second set of activities represented in Tables VII - X. The activity of working with your own tools showed that 18.5

percent of the A level, 10.7 percent of the B level, and 19.0 percent of the C level students choose this as a third choice. The activity of doing a job correctly brought forth that 13.2, 15.2, and 19.0 percent, respectively, of each group choose it as a third choice. The activity of being neat showed that 14.0, 13.2 and 14.3 percent, respectively, choose it as a third choice. The other percentages in comparison were relatively close.

TABLE IX

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET II, THIRD CHOICES

Third Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Make tool racks	4	4.3	2	2.2	0	0.0
Work with your own tools	17	18.5	10	10.7	4	19.0
Work	7	7.6	11	11.9	2	9.5
Keep clean	7	7.6	4	4.3	1	4.8
Work in a clean place	7	7.6	8	8.8	1	4.8
Wear work clothes	7	7.6	9	9.8	1	4.8
Get dirty	9	9.8	12	13.2	2	9.5
Do a job correctly	12	13.2	14	15.2	4	19.0
Keep tools and machines oiled	9	9.8	10	10.7	3	14.3
Be neat	13	14.0	12	13.2	3	14.3
Total	92	100.0	92	100.0	21	100.0

Chi-square = 9.20 X^2 at .05 level = 28.87

However, a chi-square value of 9.20 with eighteen degrees of freedom was found to be insignificant at the .05 level. The null hypothesis was again accepted.

Table X presents the comparison of fourth choices pertaining to the activities in the group represented by Tables VII - X. The largest percentage of respondents from the three success levels chose the activity of keeping tools and machines oiled as a fourth choice (12.0 percent of the A level, 17.5 percent of the B level, and 19.0 percent of the C level). However, the major differences in percentage comparison were in relation to working with your own tools (A level 10.8 percent, B level 12.0 percent, and C level 0.0 percent); liking to work (A level 14.1, B level 6.5, and C level 9.5 percent); and liking to wear work clothes where the percentages were 18.5, 9.8, and 9.5, respectively.

A chi-square value of 17.28 with eighteen degrees of freedom was found to be insignificant at the .05 level. Therefore, the null hypothesis that attitudes maintained by a student toward activities related to industrial arts lab make no difference on his level of success in industrial arts was accepted.

TABLE X

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET II, FOURTH CHOICES

Fourth Choice Likes to	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Make tool racks	8	8.8	6	6.5	1	4.8
Work with your own tools	10	10.8	11	12.0	0	0.0
Work	13	14.1	6	6.5	2	9.5
Keep clean	7	7.6	6	6.5	1	4.8
Work in a clean place	6	6.5	10	10.8	2	9.5
Wear work clothes	17	18.5	9	9.8	2	9.5
Get dirty	3	3.3	9	9.8	3	14.3
Do a job correctly	7	7.6	10	10.8	3	14.3
Keep tools and machines oiled	11	12.0	16	17.5	4	19.0
Be neat	10	10.8	9	9.8	3	14.3
Total	92	100.0	92	100.0	21	100.0

Chi-square = 17.28 X^2 at .05 level = 28.87

Table XI presents a first choice comparison of a third set of activities which is represented in Tables XI - XIII. The largest percentages of the three groups are in relation to two activities as first choices of this set of activities. When asked if they liked to work building things 35.9 percent, 40.2 percent, and 47.6 percent of the A, B, and C levels, respectively, chose it as a first choice. Also, when asked if they liked to work on machines 29.3, 27.2 and 23.8 percent, respectively, chose this activity as a first choice.

Most of the other percentages in relation to the other activities were similar.

TABLE XI

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET III, FIRST CHOICES

First Choice Do You Like To Work	Level of Success					
	A		B		C	
	N	%	N	%	N	%
On machines	27	29.3	25	27.2	5	23.8
On repair work	9	9.8	6	6.5	1	4.8
On electrical things	7	7.6	9	9.8	3	14.2
Building things	33	35.9	37	40.2	10	47.6
With tools	10	10.9	11	12.0	1	4.8
On hard work	6	6.5	4	4.3	1	4.8
Total	92	100.0	92	100.0	21	100.0

Chi-square = 4.00 X^2 at .05 level = 18.31

Yield of a chi-square value of 4.00 with ten degrees of freedom proved to be insignificant at the .05 level. The null hypothesis that attitudes maintained by a student toward activities related to industrial arts lab make no difference on his level of success in industrial arts was accepted.

An analysis of data pertaining to the second choices of the activities represented by Tables XI - XIII is presented in Table XII.

The highest percentage of students responding were found to have chosen working with tools as a second choice (28.3, 36.0, and 33.3 percent of the A, B, and C levels, respectively). The activity of liking to build things also had a relatively high percentage of students choosing it (23.9, 17.4, and 9.5 percent of the A, B, and C levels, respectively).

TABLE XII

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET III, SECOND CHOICES

Second Choice Likes to Work	Level of Success					
	A		B		C	
	N	%	N	%	N	%
On machines	11	12.0	11	11.9	3	14.2
On repair work	14	15.2	17	18.5	8	38.0
On electrical things	14	15.2	11	11.9	1	5.0
Building things	22	23.9	16	17.4	2	9.5
With tools	26	28.3	33	36.0	7	33.3
On hard work	5	5.4	4	4.3	0	0.0
Total	92	100.0	92	100.0	21	100.0

Chi-square = 10.69 X^2 at .05 level = 18.31

However, a chi-square value of 10.69 with ten degrees of freedom was insignificant at the .05 level. Therefore, the null hypothesis was again accepted.

Table XIII presents an analysis of data of third choices made by

the students in relation to the third set of activities related to industrial arts lab. The largest differences in percentage of at least one of the success levels existed in the activities of repair work (21.7, 14.1, and 9.6 percent of the A, B, and C levels, respectively, chose this activity); and electrical things (21.7, 9.8, and 14.3 percent of the A, B, and C groups, respectively, chose it as a third choice). The other percentages were very similar.

TABLE XIII

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET III, THIRD CHOICES

Third Choice Likes to Work	Level of Success					
	A		B		C	
	N	%	N	%	N	%
On machines	10	10.9	15	16.3	4	19.0
On repair work	20	21.7	13	14.1	2	9.6
On electrical things	20	21.7	9	9.8	3	14.3
Building things	9	9.8	15	16.3	5	23.8
With tools	18	19.6	15	16.3	3	14.3
On hard work	15	16.3	25	27.2	4	19.0
Total	92	100.0	92	100.0	21	100.0

Chi-square = 14.03 X^2 at .05 level = 18.31

A chi-square value of 14.03 was found to be insignificant at the .05 level. Therefore, the null hypothesis was again accepted.

Table XIV presents the final data pertaining to attitudes toward activities related to industrial arts lab. The percentage comparison of the three success levels were found to be very similar. In fact, of students responding the percentages were all in the 80 and 90 percent area. There were no large differences in any of the activities. However, the largest difference was related to the activity of not minding getting dirty (83.7, 83.7, and 90.5 percent of the A, B, and C levels, respectively, did not mind getting dirty).

TABLE XIV

ATTITUDES TOWARD ACTIVITIES RELATED TO INDUSTRIAL ARTS LAB BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS, SET IV

Factors	Level of Success					
	A		B		C	
	N (92 boys)	%	N (92 boys)	%	N (21 boys)	%
Like to work with their hands	87	94.6	88	95.7	20	95.2
Do not mind getting dirty	77	83.7	77	83.7	19	90.5
Think it is desirable to know how to work with tools	85	92.4	84	91.3	20	95.2

Since the percentages were of high value and quite similar, the null hypothesis was accepted.

Overall Grade Average and Attitude Toward School

Table XV presents an analysis of data pertaining to overall grade average and its relation to level of success in industrial arts lab. A comparison of percentages of each group of the three success levels revealed that they were quite different. For example, it was found that 15.2 percent of those in the A level of success in industrial arts had an overall grade average of C, while 38.0 percent of those in the B success level had a C overall average, and 66.7 percent of those in the C success level had a C overall average. Also, 51.0 percent of the B level students had an overall average of B, while 55.4 percent of the A level had a B average. A small percent (9.5) of the C level maintained an overall average of B. The other overall average areas had smaller percentages of the success level students in them, but they were also quite different.

A chi-square value of 63.80 with eight degrees of freedom was judged to be significant at the .05 level. Therefore, it was judged that the overall grade average category in which a student belongs has a bearing on what level of success he will achieve in industrial arts.

TABLE XV

OVERALL GRADE AVERAGE BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Overall Average	Level of Success					
	A		B		C	
	N	%	N	%	N	%
A	25	27.2	7	7.6	0	0.0
B	51	55.4	47	51.1	2	9.5
C	14	15.2	35	38.0	14	66.7
D	1	1.1	3	3.3	5	23.8
F	1	1.1	0	0.0	0	0.0
Total	92	100.0	92	100.0	21	100.0

Chi-square = 63.80 X^2 at .05 level = 15.51

Table XVI presents an analysis of data about attitude toward school. Slightly over half of the A (58.7) and B (56.5) level students liked school while slightly under half (38.1) of the C level students liked school.

TABLE XVI

ATTITUDE TOWARD SCHOOL BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Factor	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Likes school	54	58.7	52	56.5	8	38.1
Dislikes school	38	41.3	40	43.5	13	61.9

Chi-square = 14.82 X^2 at .05 level = 26.30

A chi-square value of 3.07 with two degrees of freedom was found to be insignificant at the .05 level. The null hypothesis that a student's attitude toward school makes no difference on his level of success in industrial arts was accepted.

Favorite Hobbies, Activities, Subjects and Magazines of the Students

An analysis of hobbies liked by the students in relation to success level in industrial arts lab is presented in Table XVII. Percentage comparison among the three levels of success proved to be closely similar in most cases. However, in relation to the hobby of stamp collecting, 12.0 percent of the A level, 7.6 percent of the B level, and only 4.8 percent of the C level liked this hobby. Another hobby in which percentages varied somewhat was that of coin collecting (16.3, 31.5, and 23.8 percent of the groups, respectively, liked to do this type hobby).

A chi-square value of 14.18 with twenty-two degrees of freedom was found to be insignificant at the .05 level. Therefore, the null hypothesis that the type hobbies liked by the student makes no difference on his level of success in industrial arts was accepted.

TABLE XVII

FAVORITE HOBBIES BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Hobbies	Level of Success					
	A		B		C	
	N*	%	N*	%	N*	%
Art work	39	42.4	41	44.6	8	38.1
Coin collecting	15	16.3	29	31.5	5	23.8
Model cars	37	40.2	44	47.8	12	57.1
Model boats	18	19.6	17	18.5	6	28.6
Model airplanes	31	33.7	31	33.7	7	33.3
Repairing engines and motors	44	47.8	40	43.5	11	52.4
Stamp collecting	11	12.0	7	7.6	1	4.8
Wood work	68	73.9	63	68.5	11	52.4
Metal work	15	16.3	16	17.4	4	19.0
Making things	58	63.0	55	59.8	14	66.7
Puzzles	16	17.4	13	14.1	1	4.8
Radio repair	16	17.4	12	13.0	4	19.0
Total	368	400.0	368	400.0	84	400.0

Chi-square = 14.18 X^2 at .05 level = 33.92
*Respondents were asked to make four choices.

Table XVIII presents an analysis of data pertaining to favorite activities and level of success in industrial arts lab. The largest percentage of differences found were in relation to the activity of playing chess (19.6, 17.4, and 9.5 percent of the A, B, and C groups, respectively, liked it), while 5.4, 2.2, and 14.3 percent of the A, B, and C groups, respectively, liked the activity of playing checkers. All other areas were relatively similar.

TABLE XVIII

FAVORITE ACTIVITIES BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Activities	Level of Success					
	A		B		C	
	N*	%	N	%	N	%
Baseball	41	44.6	55	59.8	14	66.7
Football	71	77.2	58	63.0	15	71.4
Basketball	50	54.3	48	52.2	15	71.4
Ping Pong	20	21.7	24	26.1	6	28.6
Archery	12	13.0	21	22.8	3	14.3
Hunting	56	60.9	59	64.1	9	42.9
Reading	17	18.5	12	13.0	4	19.0
Chess	18	19.6	16	17.4	2	9.5
Checkers	5	5.4	2	2.2	3	14.3
Cards	23	25.0	17	18.5	5	23.8
Writing stories	4	4.4	3	3.3	0	0.0
Pool	51	55.4	53	57.6	8	38.1
Total	368	400.0	368	400.0	84	400.0

Chi-square = 23.34 X^2 at .05 level = 33.92

*Respondents were asked to make four choices.

Yield of a chi-square value of 23.34 with twenty-two degrees of freedom was found to be insignificant at the .05 level for this set of activities in comparison to success level. The null hypothesis that the type activities liked by the student makes no difference on his success level in industrial arts was accepted.

Table XIX presents data analyzed in relation to a student's favorite subject by success level in industrial arts lab. There were two subjects in which there were any real differences among the groups. The subjects were band, where 16.3 percent of the A level, 28.3 percent of the B level, and 9.5 percent of the C level thought of it as a favorite subject; and science, where 56.5, 60.9, and 23.8 percent of the A, B, and C levels, respectively, thought it a favorite subject.

A chi-square value of 22.95 with eighteen degrees of freedom was judged insignificant at the .05 level. Because of this, the null hypothesis that the type subject a student likes makes no difference on his level of success in industrial arts was accepted.

TABLE XIX

FAVORITE SUBJECTS BY LEVEL OF SUCCESS
IN INDUSTRIAL ARTS

Subjects	Level of Success					
	A		B		C	
	N*	%	N*	%	N*	%
Band	15	16.3	26	28.3	2	9.5
Orchestra	1	1.1	1	1.1	1	4.8
Math	64	69.6	59	64.1	14	66.7
Science	52	56.5	56	60.9	5	23.8
History	32	34.7	24	26.1	5	23.8
English	32	34.7	31	33.7	10	47.6
Physical Education	72	78.3	70	76.1	18	85.7
Art	49	53.3	57	61.9	19	90.5
Foreign Language	25	27.2	28	30.4	7	33.3
Speech	26	28.3	16	17.4	3	14.3
Total	368	400.0	368	400.0	84	400.0

Chi-square = 22.95 X^2 at .05 level = 28.87
*Respondents were asked to make four choices.

An analysis of data representing the relation between a student's favorite magazines and level of success in industrial arts lab is presented in Table XX. Music magazines were liked by 17.4 percent of the A level, 9.8 percent of the B level, and 4.8 percent of the C level students. The liking by students of travel magazines, percentage wise, was identical in the A and B levels (25.0 percent) while 9.5 percent of the C level liked them. All other magazines were liked by relatively close percentages in each of the three groups.

TABLE XX

FAVORITE MAGAZINES BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Magazines	Level of Success					
	A		B		C	
	N*	%	N*	%	N*	%
Sports	82	89.1	76	82.6	16	76.2
Mechanics	41	44.6	46	50.0	10	47.6
Science	21	22.8	20	21.7	3	14.3
Art	17	18.5	22	23.9	8	38.1
Automobile	67	72.8	67	72.8	16	76.2
Machinery	38	41.3	47	51.1	11	52.4
Music	16	17.4	9	9.8	1	4.8
Airplane	36	39.1	40	43.5	13	61.9
Travel	23	25.0	23	25.0	2	9.5
Collecting	27	29.4	18	19.6	4	19.0
Total	368	400.0	368	400.0	84	400.0

Chi-square = 15.18 X^2 at .05 level = 28.87
*Respondents were asked to make four choices.

However, a chi-square value of 15.18 with eighteen degrees of freedom was found to be insignificant at the .05 level. The null hypothesis that the type magazines liked by a student makes no difference on his level of success in industrial arts was accepted.

Location in Which a Student Likes to Work

An analysis of data pertaining to where a student likes to work is presented in Table XXI. A comparison of percentages of each of the success levels revealed that the larger percentage of students like to

work in the country and outdoors. The percentages of those students liking to work in the country were 38.0, 27.2, and 33.3 percent of the A, B, and C levels, respectively. The percentages of those students liking to work outdoors were 42.4, 53.3, and 42.9, respectively. The large difference in the groups was related to working indoors. Twice as many of the C level (19.0 percent) as either of the A or B levels would rather work indoors.

TABLE XXI

LOCATION IN WHICH STUDENTS LIKE TO WORK BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Likes to Work	Level of Success					
	A		B		C	
	N	%	N	%	N	%
In the country	35	38.0	25	27.2	7	33.3
In the city	2	2.2	3	3.2	0	0.0
In an office	8	8.7	6	6.5	1	4.8
Indoors	8	8.7	9	9.8	4	19.0
Outdoors	39	42.4	49	53.3	9	42.9
Total	92	100.0	92	100.0	21	100.0

Chi-square = 6.54 X^2 at .05 level = 15.51

However, a chi-square value of 6.54 with eight degrees of freedom was found to be insignificant at the .05 level. Therefore, the null hypothesis that location in which a student likes to work makes no difference on his level of success in industrial arts was accepted.

Person Influencing a Student to Take Industrial Arts

Table XXII presents an analysis of data representing the relation between a person's influencing a student to take industrial arts and the student's level of success. In the school in which data for this study was collected, the eighth grade male students received a choice of taking industrial arts or some other course. Of those responding to this area on the questionnaire, it was found that the student himself was the major influential person in his choice to take industrial arts (69.0 percent of the A level, 88.3 percent of the B level, and 70.6 percent of the C level influenced himself).

TABLE XXII

PERSONS THAT INFLUENCE STUDENTS TO TAKE INDUSTRIAL ARTS BY LEVEL OF SUCCESS IN INDUSTRIAL ARTS

Persons	Level of Success					
	A		B		C	
	N	%	N	%	N	%
Counselor	6	14.2	2	4.7	1	5.9
Teacher	1	2.4	2	4.7	0	0.0
Brother	1	2.4	0	0.0	1	5.9
Mom	1	2.4	0	0.0	0	0.0
Dad	2	4.8	0	0.0	1	5.9
You	29	69.0	38	88.3	12	70.6
Friend	2	4.8	1	2.3	2	11.7
Total	42	100.0	43	100.0	17	100.0

Chi-square = 12.19 X^2 at .05 level = 21.03

However, a chi-square value of 12.19 with twelve degrees of freedom was found to be insignificant at the .05 level for the relationship of who influenced a student to enroll in industrial arts and his level of success. Therefore, the null hypothesis that the person influencing a student to take industrial arts makes no difference on his level of success in industrial arts was accepted.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Presented in this chapter are a summary review of the study, the design and conduct of the study, and the major findings. Also presented are conclusions and recommendations based upon the analysis and summarization of the data collected.

Summary

Purpose of the Study

The purpose of this study was to determine if there are differences in selected factors which could influence a student's success in industrial arts in relation to success level in industrial arts.

Specific Objectives of the Study

The following were formulated to accomplish the major purpose of the study:

1. To compare the type of occupation of the father to the student's level of success in industrial arts.
2. To compare the type of occupation a student desires for the future to his success level in industrial arts.
3. To compare the type hobbies, activities, subjects, and magazines a student likes to the student's level of success in industrial arts.
4. To compare overall grade average category and attitude toward school of the student to his level of success in industrial arts.

5. To compare attitudes maintained by a student toward activities related to industrial arts to his level of success in industrial arts.

6. To compare location in which a student likes to work to his level of success in industrial arts.

7. To compare persons influencing students to take industrial arts to the student's level of success in industrial arts.

Need for the Study

Students many times become enrolled in classes in industrial arts for which they have little aptitude and little interest. This situation results in a waste of time of the student and the instructor. The study was an attempt to find a possible solution to this problem.

Design and Conduct of the Study

Following a review of the literature, the selection of a study population, developing an instrument for collection of data, and collection and an analysis of data were the major tasks involved in the design and conduct of the study.

The study sample consisted of 205 students enrolled in industrial arts in a junior high school. The instrument used in the collection of data was a questionnaire which was administered to students by the researcher and other graduate students in education.

Summary of Findings

The findings of the study have been presented in terms of seven objectives which were formulated to provide direction to the stated purpose of the study. Hypotheses, in the null form, were submitted in relation to the objectives of the study.

Objective I. To compare the type of occupation of the father to the student's level of success in industrial arts.

Comparisons of the three success levels (A, B, and C) in industrial arts were made under nine occupational categories: (1) Professional, technical, and managerial; (2) Clerical and sales; (3) Service; (4) Farming, fishery, forestry, and related; (5) Processing; (6) Machine trades; (7) Bench work; (8) Structural work; and (9) Miscellaneous.

The analysis of data revealed that the differences between the groups in relation to the father's occupation was insignificant as measured by the chi-square test of goodness of fit.

Objective II. To compare the type of occupation a student desires for the future to his level of success in industrial arts.

Comparisons were made of the occupational classifications of the students. The chi-square value of 14.68 was found to be insignificant at the .05 level.

Objective III. To compare the type hobbies, activities, subjects, and magazines a student likes to his level of success in industrial arts.

Analysis of data comparing the hobbies, activities, subjects, and magazines liked by the students to the success level was made. The comparisons were all found to be insignificant by the chi-square test of goodness of fit.

Objective IV. To compare overall grade average category of the student and attitude toward school to his

level of success in industrial arts.

Analysis of data comparing overall grade average to the student's level of success was found by a chi-square value of 63.80 to be significant at the .05 level. However, in relation to comparing attitude toward school to the student's level of success in industrial arts, the chi-square test measured it as being insignificant at the .05 level.

Objective V. To compare attitudes maintained by the student toward activities related to industrial arts to student's level of success in industrial arts.

Comparisons were made of three sets of activities and three separate activities within themselves to the student's level of success in industrial arts. The first and third sets and the three separate activities within themselves were found to be insignificant at the .05 level by the chi-square test of goodness of fit.

However, the second set first choice was found by a chi-square value of 34.63 to be significant at the .05 level. The second, third, and fourth choices of this set were judged to be insignificant by the chi-square test.

Objective VI. To compare location in which a student likes to work to his level of success in industrial arts.

The analyzed data revealed that the difference between the three success groups and their levels of success in industrial arts was not significant at the .05 level as measured by the chi-square test of goodness of fit.

Objective VII. To compare persons influencing students to

take industrial arts to the student's level of success in industrial arts.

An analysis of data pertaining to Objective VII was judged to be insignificant at the .05 level by the chi-square test of goodness of fit.

Conclusions

Based upon the findings of this study, the following conclusions were drawn:

1. Occupation of the father, desired future occupation of the student, hobbies, activities, subjects, magazines, location in which a student likes to work, and persons influencing a student to take industrial arts make no difference on the level of success (A, B, or C) at which the student will achieve in industrial arts.

2. Comparison of attitudes maintained toward activities related to industrial arts generally make no difference on the success level of the student. However, in the comparison of the first choices the student made in relation to the selected following factors: Make tool racks; Work with your own tools; Work; Keep clean; Work in a clean place; Wear work clothes; Get dirty; Do a job correctly; Keep tools and machines oiled; and Be neat; was found that the percentage of students choosing each factor differed greatly. Each of the factors can be placed in relation to at least one of the success levels.

3. The overall grade average category of which a student is a member has a bearing on the level of his success in industrial arts. The majority of the A level students have overall averages of A and B. The majority of B level students have overall grade averages of B and

C. The majority of C level students have overall grade averages of C and D.

4. A student's attitude toward school (whether he likes or dislikes school) does not affect the level of success at which he works in industrial arts.

Recommendations

In light of the findings and conclusions, the following general recommendations are offered.

1. The findings of this study should be studied by all school administrations in order that they may better understand the achievements and needs of their industrial arts programs.

2. In counseling students in junior high school, an attempt should be made to determine if the student would like to take industrial arts to aid him in making more enlightened occupational choices.

3. Effort should be put forth to have more study done in all areas of levels of success and factors that might be relevant to each level.

1/2
1
1/2
1/4
2 1/4
1 1/8

SELECTED BIBLIOGRAPHY

Herr, Edwin L. "Guidance and Vocational Aspects of Education: Some Considerations." The Vocational Guidance Quarterly. XVII (March, 1969), 178-184.

Johnson, Richard G. "Simulation Techniques in Career Development." American Vocational Journal. XLV (September, 1970), 30-32.

Katz, Martin R. "Career Guidance: Expanding the Student's Decision Making Power." The Bulletin of the National Association of Secondary School Principals. LIV (May, 1970), 88-95.

Lacy, Leon. "A Study of Factors Which Influence Trade and Industrial Students in the Selection of a Vocation." (Unpublished M. S. thesis, Oklahoma State University, 1958).

Maley, Donald. "Into the Mainstream." American Vocational Journal. XLV (February, 1970), 42-44.

New York University, New York. "The Selection of Students for Entrance into Trade Programs in Public Secondary Schools." (Published ERIC Document, ED 038 494, January, 1969).

"Report of the Ad Hoc Committee on Criteria and Guidelines for Funding Industrial Arts." School Shop. XXXI (January, 1972), 26.

U. S. Department of Labor. Dictionary of Occupational Titles. 3rd ed. Washington, D.C.: U. S. Government Printing Office, 1965.

Washington, Bradley A. "Factors Affecting the Enrollment of Junior High School Students in Elective Industrial Arts Courses." (Unpublished M. S. thesis, Oklahoma State University, 1962).

Watley, Donivan J. "Student Decisions Influenced by Counselors and Teachers." Vocational Guidance Quarterly. XV (September, 1966), 36-40.

APPENDIXES

INSTRUCTIONS FOR ADMINISTERING THE QUESTIONNAIRE

1. The questionnaire is to be administered to those students that have taken or are taking industrial arts (shop or mechanical drawing).

2. Make sure each student has a complete questionnaire.

3. In the upper right hand corner of the questionnaire, have the student put the number 7 if he is in the seventh grade or the number 8 if he is in the eighth grade.

4. Do not have the student put his name on the questionnaire.

5. Begin administering the questionnaire by reading the questionnaire information and directions aloud to the students. Next, read all the questions aloud to the students allowing time after each one for the students to mark their answers.

QUESTIONNAIRE
FORM I

Information:

This is not a test. The purpose of this survey is to acquire some important information about students from the students themselves. To do this we need your most thoughtful and honest answers. Your answers will remain confidential. No individual or school will be named in the report of this study.

Directions:

1. Be sure you have a complete questionnaire and that you have taken or are taking industrial arts.

2. Place at the top of your paper the number 7 if you are in the seventh grade or the number 8 if you are in the eighth grade.

3. Read every statement carefully as each is read to you.

4. There are no right or wrong answers. An answer is right if it is true for you.

5. On the questions that have several choices, you should choose the number of choices asked for and number them according to importance: The number 1 being the most important, the number 2 next important, etc.

6. Circle the letter in front of your answers. Write out the answer where there are blank spaces.

7. Answer every item; do not omit any.

8. Remember, please answer all questions honestly.

1. Which of the following are your favorite hobbies? (Pick 4 most important).

a. Art work	g. Stamp collecting
b. Coin collecting	h. Wood work
c. Model cars	i. Metal work
d. Model boats	j. Making things
e. Model airplanes	k. Puzzles
f. Repairing engines and motors	l. Radio repair

2. What kind of work does your father do? If he is a college student, what is he training for?

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3. Do you like working with your hands?

a. Yes b. No

4. What do you want to do when you get out of school?

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5. What is your grade average? (Nine week's average for seventh grade) (Semester average for eighth grade)

a. A b. B c. C d. D e. F

6. What is your favorite activity? (Pick 4 most important).

a. Baseball	g. Reading
b. Football	h. Chess
c. Basketball	i. Checkers
d. Ping pong	j. Cards
e. Archery	k. Writing stories
f. Hunting	l. Pool

7. What is or was your grade average in shop?

a. A b. B c. C d. D e. F

8. Do you like school?

a. Yes b. No

9. What subjects do you like best? (Pick 4 most important).

a. Band	f. English
b. Orchestra	g. Physical Education
c. Math	h. Art
d. Science	i. Foreign Language
e. History	j. Speech

10. Which person or person helped you decide to take shop?

a. Counselor
b. Teacher
c. Brother
d. Sister
e. Mom
f. Dad
g. You
h. Friend

11. What are your favorite magazines? (Pick 4 most important).

a. Sports
b. Mechanics
c. Science
d. Art
e. Automobile
f. Machinery
g. Music
h. Airplanes
i. Travel
j. Collecting

12. Do you like to work (Pick 3 most important).

a. on machines?
b. on repair work?
c. on electrical things?
d. building things?
e. with tools?
f. on hard work?

13. Do you like to (Pick 4 most important).

a. know why things work?
b. make things work?
c. put things together?
d. experiment?
e. work on different kinds of things?
f. follow directions?
g. figure things out?
h. work with people?
i. write about things?

14. Are you now or were you in an exploratory group?

A. Yes
b. No

15. Do you like to work (Pick 1).

a. in the country?
b. in the city?
c. in a factory?
d. in an office?
e. in doors?
f. out of doors?

16. Do you mind getting dirty if a job calls for it?

a. Yes
b. No

17. Do you like to (Pick 4 most important).

a. make tool racks?
b. work with your own tools?
c. work?
d. keep clean?
e. work in a clean place?
f. wear work clothes?
g. get dirty?
h. do a job correctly?
i. keep tools and machines oiled?
j. be neat?

18. Do you think it is desirable to know how to work with tools and machines?

a. Yes
b. No

VITA

James Elden Biggs

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF FACTORS THAT COULD BE INFLUENTIAL IN THE SELECTION OF STUDENTS FOR ENTRANCE INTO INDUSTRIAL ARTS PROGRAMS IN JUNIOR HIGH SCHOOL

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