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A Proposal for Enrichment of Industrial Arts Program in the Junior High Schools

Cornelius See

A PROPOSAL FOR ENRICHMENT OF INDUSTRIAL ARTS PROGRAM IN THE JUNIOR HIGH SCHOOLS

PRAIRIE VIEW AGRICULTURAL AND MECHANICAL COLLEGE

PRAIRIE VIEW, TEXAS

May 5, 1970

DIVISION OF GRADUATE STUDY

COMMITTEE ON GRADUATE STUDY:

The undersigned have on this date examined Cornelius See for the Master's degree and hereby certify that the examination has been successfully completed.

The thesis has been inspected by each of us and is approved.

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2. Examiner's Evaluation of this Student's responses during the Oral Examination: (Please check the most appropriate evaluation or give a statement of personal evaluation).

   a. ✓ Responses indicated that the candidate was well-poised an and able to answer freely and without serious inhibitions.

   b. ✓ Responses indicated that the candidate has an excellent fund of information pertaining to his major field.

   c. ✓ Responses were logical and well-thought out.

   d. ___ Responses were somewhat slow, but showed ability to reason.

   e. ___ Responses indicated that the candidate was lacking in important facts pertaining to his or her major field.

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3. Examiner's Recommendation as to whether or not this student should be recommended for the Master's Degree:

   a. ✓ Recommended without qualifications.

   b. ___ Recommended with doubts as to his ability to go much farther in his graduate career.

   c. ___ Recommended on condition that the candidate be specifically discouraged from any further graduate study.

   d. ___ Not recommended for the degree at this time.

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Date 5/5/70 [redacted]

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In summation let us look again at some of the suggestions that will enhance and enrich a program of industrial arts in the junior high schools. So many small schools do not even offer it. The schools that offer it, offer it only to boys and the girls are left out. These schools do not realize that girls need an interest.

With Texas ranking 38 in base pay for teachere, better teachers will not be attracted to the Texas School expecially industrial arts teachers.

It is intended that this material will be beneficial to the teacher, administration, and the community where industrial arts programs are lagging or need enrichment.

A PROPOSAL FOR ENRICHMENT OF INDUSTRIAL ARTS PROGRAM IN THE JUNIOR HIGH SCHOOLS

A Thesis

By

Cornelius See

Submitted to the Graduate School of
Prairie View Agricultural and Mechanical College
In Partial Fulfillment of The
Degree of
MASTER OF SCIENCE

May, 1970

Industrial Education

A PROPOSAL FOR ENRICHMENT OF INDUSTRIAL ARTS PROGRAM IN THE JUNIOR HIGH SCHOOLS

A Thesis

By

Cornelius See

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Thanks are also extended the writer's wife Mrs. Cleo E. See for her many hours of patience and encouragements in preparation of this study.

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CHAPTER I

INTRODUCTION AND STATEMENT OF PROBLEM

Introduction. Current trends in the field of industrial education tends to support the argument that there is a need for the enrichment of industrial arts in the junior high school. The introduction of crafts has been a step in this direction. A well-rounded industrial arts program is, in part, the types of projects used and the methods used to acquaint the students with tool operations and ways of construction these projects. The projects selected for, and by, the student may endanger, or may help his desire to carry over into adult life the operations learned in industrial arts courses.

I. THE PROBLEM

Statement of the Problem. The purpose of this study is an attempt to: (1) help the instructor make better classroom presentations; (2) give an idea of how mechanisms may be used to assist the demonstration; (3) give, in part, an idea on what to demonstrate, and how it should be accomplished; (4) suggest that crafts be introduced more into our junior high school industrial arts program; (5) show that this work can be used to bring out the abilities of the students; and (6) to help improve the administrative aspect of the Industrial Arts program.

Importance of the study. The writer hopes that the data presented in this study will be of value to the students, supervisors, administrators, and teachers in that it will aid them in preparing children to play their part creditably in their adult years. It is also intended to give the average individual not particularly interested in industrial arts a knowledge of the subject, based upon principles that have survived for hundred of years in industrial arts monuments and history. The teacher, pupil, or layman should use his knowledge of the subjects as a basis for criticism or appreciation of the field of the industrial arts.

Limitation of the study. The study was limited to the investigator's experiences as a researcher. It was further limited to a review of literature related to Junior High School Industrial Arts Programs. Specifically, it was intended to be of service to the community and to the individual.

Basis assumption. (1) That there is a basic need for industrial arts training for the students at Junior High level. (2) That there is a profound need for increased approaches to prevent drop out. (3) The present industrial art program with the present project subject matter is not meeting the needs of students in school. (4) That there is positively a definite interest in industrial arts by the students in Junior High School.

Methodology. The writer will review literature on in-

dustrial arts project, and to show how projects are selected, when, and why a project should be selected. The writer also wish to review literature on Thesis, Term Papers, and Dissertations in the field of Industrial Arts.

II. DEFINITIONS OF TERMS USED

Industrial Arts. Industrial shop work which provides for all youth sound educational experiences that contribute to the satisfaction of their purposes, needs and wants. It is an integral part of the general program of all youth. It offers these learning experiences which assist boys and girls to understand the industrial and technical aspects of life.[1]

Mechanical Drawing. The art of reproducing or creating, usually on paper, by use of instruments, a design or plan by which to work. This includes the knowledge of the language of mechanical drawing, which is standard throughout the United States, and to some extent, throughout the world.[2]

Woodwork. This term, as used here, means constructing projects of wood. This also includes the use of hand tools, as well as the knowledge of where wood comes from and how it is reduced to workable pieces.[3]

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[1] Definitions of Terms in Vocational and Practical Arts Education. Washington, D.C.: American Vocational Association, 1954, pp. 10-11.

[2] Ibid., p. 10.

[3] Ibid., p. 10.

Woodcarving. The method by which wood is carved into a design as a whole, or a surface is selected and design carved upon it. The skills of this trade should be understood by the student.[4]

Leatherwork. The method by which a piece of leather is worked into a beautiful belt or purse, or other object. An understanding of the tools used in this work should be developed by the student.[5]

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4 Ibid., p. 11

5. Ibid., p. 11

REVIEW OF LITERATURE

CHAPTER II THE NEED AND PURPOSE OF INDUSTRIAL ARTS

The Need For Industrial Arts.

The elementary grades constitute the period of foundational education, of training in the common subjects, of beginning of concepts of industrial processes and interdependence of consumer and producer. Industry and the machine are promient factors in our civilization, factors which any one in education must consider. In time past, a child through actual participation in home activities acquired a knowledge of industrial progresses and some appreciation of the value of their product in his life be shared in the responsibility. He knew the time, labor, tools and processes by which materials were made usable. He had a well rounded industrial education for that period of time.

Today, however, opportunities for such first-hand knowledge are lacking. Fathers are away most of the time - far away from home where he can not spend time with the child. The mother sometimes has a part time job to help supplement the family income. The child's experience is with the finished product. Industrial arts as a content subject of the curriculum at the Junior and Senior High level gives the child this background and contributes to his understanding of what is going on about him and to his living more intelligently.

No difference should be made on the elementary level in the opportunities that industrial arts offered to boys and girls. Both are consumers of the products of industry; both have needs for the traits that industrial arts wish to cultivate.

The purpose of Industrial Arts, perhaps, a discussion of what industrial arts is; what part it plays; and what part it should play in the life of the pupil, may not be amiss at this time. Feuerstein[1] gives his four main purposes of Industrial Arts:

1. To offer the boy a means of expressing his ideas in some useful way.
2. To give the boy an opportunity of working and mingling with his associates.
3. To give the boy a knowledge of the uses of the common tools.
4. To give the boy an idea of the possibility of the various trades and industries.

Let us consider the first part of the first aim, to offer the boy a means of expressing his ideas. Every child has some desire to build, to create, to do something to express himself. It is the privilege of those charged with the care of the child to see that this desire is channeled the right direction. Expressed in this first aim is also the idea of interesting the child in something to occupy his spare time and so form a basis for a hobby, or in other words, a

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[1] Arthur Feurstein, "An Argument for Industrial Arts in the School Curriculum," Industrial Arts and Vocational Education, XVII (June, 1934), p. 57.

wholesome substitute for the pool-room, the crap game, and the street corner. Thus the first aim serves two purposes, a worthy interest.

The above quotation might, in some instances, lead people to believe that industrial arts in only for the large schools and boys. Their reasoning would be that small communities do not have pool-rooms, or gambling devices, et cetera. The small towns may not have them but they have their substitutes. Children can find mischief any where if emphasis is not placed on the use of their leisure time.

Juvenile Delinquency

According to statistics the number of juvenile delinquents is increasing by leaps and bounds, which makes juvenile delinquency one of the most pressing problems today and one of vast socialogical importance. Dooley[2] has this to say about juvenile delinquency.

A generation ago, the reduction of juvenile delinquency was not considered as one of the duties of the public-school system. But today because of its vast importance, the public school system, in cooperation with every other agency, must assist in reducing juvenile delinquency.

A good industrial arts program could do a great deal in helping to curb juvenile delinquency. Such a program will

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[2] William H. Dooley, "Juvenile Delinquency and Vocational Education," Industrial Arts and Vocational Education. XXVIII (January, 1949), p. 52.

aid the instructor to make better classroom presentations and demonstrations. The program could be started in the elementary grades, and possibly carried through out high schools. It must be at its best for the students on the junior high level, because here concepts are formed and drop-outs begins. If the need of the students could be met here we will be on our way to better schools systems. This should not be done only in large schools, but in small schools as well and for all students, boys and girls.

The Texas Program

The public schools systems are gradually showing improvement in the industrial arts program. More and more money is being spent and appropriated to improve the schools weak industrial arts programs. However, very few schools systems include industrial arts in the elementary grades. The secondary schools have seen the importance of this work for a number of years. The junior high school is in a dire need for an enriched industrial arts program. It would appear, until all school systems, no matter how small or large, includes an industrial arts program from elementary on through Senior high school, Texas will probably not rank highly among the leading states in our educational system.

Normal Types

Elementary. The elementary grades constitute the period for foundation in the education and training of the common subjects, and of the beginnings of concepts of industrial processes and interdependence of concepts and producer. The help form these concepts the students will go on field trips, and make tours of the various aspects of industry to help.

Today the child gets every thing already finished; he does not have the chance to build for himself. Due to the need of an understanding of this kind of work, we whould start industrial arts as early as possible in our public schools.

Secondary. It seems as if the junior high and Senior high schools in some of our communities have been taken into consideration as far as industrial arts is concerned, but until there is an industrial arts program in every school our educational system will lag.

Atypical Types

Behavior. The atypical children are often neglected as far as industrial arts is concerned in schools. More attention should be given to this group because these children need industrial training as much, if not more, than our normal children do.

Retarded. It is not the best plan to put our retarded children in completely separate classes, but let them enter into normal classes, for short periods of time and observe the normal child and his behavior. Some of what they observe will probably rub off on them. It has been found that our retarded children take up more of our time than our normal children do, but surely we as educators can afford this time if we see that they are profiting from this type of relation.

The following quotations were made by Penrose[3] on the retarded child.

> Teachers in Elementary schools should prepare children for industrial courses in high school. Elementary grades are too academic.
>
> Plan a course in the manual activities with related academic work so organized that pupil will be promoted on basis of achievement.
>
> Fit the pupil for a vocation that does not make demands he cannot meet unaided.

The public schools have a peculiar responsibility for proper guidance of the intellectual sub-normal because these children are capable of a fair degree in initiative and resourcefulness and because they possess qualities which if guided in the proper channels may lead to independence in school adjustment.

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[3] Lionel S. Penrose, Mental Defect. New York: Farrar and Rinehart, 1944. p. 340.

The importance of Industrial Arts in the schools

The industrial development in our cities have advanced to such an extent in the past few years that the general concern of our schools today is to provide a program of education which is fundamentally industrial.

The general public is just realizing the importance of industrial arts to our schools, not only for the value of the projects that can be built, but for the value they receive in the development of future citizena.

Industrial Arts as Social Training

Most schools with industrial arts are aware of the social and co-operative importance of their work. When a student makes an article for home use he is rendering an unselfish service and performing a deed of social and moral significance.

Projects for School Shops

The purpose and character of the projects which are made in the shops tend to shape the social value by the methods and spirit with which the work is done. Vaughn[4] and Mays gives three different methods that may be used in school shops to bring about the social training for the pupils:

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[4] Samuel J. Vaughn and Arthur B. Mays, Content and Methods of the Industrial Arts. New York: The Century Company. pp. 165-175.

(1) Work based upon the usual individual problem but for philanthropic or altruistic purposes.

(2) Work done for the individual but by the cooperation, or commerical method.

(3) Work done for the community or for general social or philanthropic purposes by the cooperation method.

The first example might include the collection of broken and used toys that are repaired and finished in the school shops and given out through philanthropic or other agencies for distribution to the unfortunate children of the community. Another example is the making of bird houses, scrapbooks, et cetra, which are placed on exhibit and offered for sale. The money received from these sales is used in the furtherance of other school or community projects. Although the actual construction of the project is done on an individual basis, such undertakings tend to cultivate an unselfish devotion to the needs and interest of the community, and give valuable training in social responsibility and obligations.

The social importance of the second example lies in how the projects are made and not the projects themselves. The class picks an article to be made that each one can use. The class is then divided into sections and a foreman is chosen. If there are ten members in the class then there will be ten articles made all alike. Each section performs a specific task to be done on the article. These sections may alternate so that each individual may have a variety of process

to perform. But when the projects are finished, each worker has done as much work on the other nine articles as he has on his own.

The third type of work combines the other two methods already mentioned. As Vaughn[5] and Mays state, it combines the motive of the one and the method of the other. The most common example is that of work done for the school such as repairs of buildings and equipment. The class is divided into groups and organized somewhat on the factory basis. The jobs are routed through the shops and each group has its own task to perform. The groups are rotated to give them experiences with the different tools and processes.

A Required Course

Industrial Arts as a required subject. Industrial arts has grown in need in our public schools to such an extent that some of our educational leaders have come to the conclusion that it should be a required course. A common practice is to require industrial arts during the seventh grade, and make it an elective in eight and nine. This scheme has the advantage of at least introducing the pupil to the industrial arts. It enables him to form a better judgement as to the extent and permanency of his interest in allied vocational fields.

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[5] Ibid., p. 169

A few abilities selected from Bobbits[6] objectives, under the heading "unspecialized practice activities," will serve to show the kinship between industrial arts and aims of education.

Ability to use all common kinds of measuring devices; measure of lengths, area, volume, capacity, weight, time, value, temperature, specific gravity, et cetera; ability to sharpen, adjust, clean, lubricate, replace worn or broken parts, and otherwise keep household and garden tools and appliances in good order and good working condition; ability to make repairs, adjustments, and sometimes to construct household furniture or other equipment.

Uses in the Home. It has been pointed out that there is a great social waste due to the inability of members of the family to make minor repairs about the house, that practical ability is useful in emergencies, that it lessens the risk of being defrauded by workers whose ethics are dimmed by lack of employment.

This is where a good industrial arts program would show its worth. For many persons, a reasonable skill as handyman is a constant pleasure - not at all dampened by realization that money is being saved.

The Objectives of Industrial Arts

One of the most important things to remember in teaching

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6 F. Bobbitt, How to Make A Curriculum. Boston, Mass.: Houghton Mifflin Company, 1934. pp. 28-29, 182.

an industrial arts course is to keep the aims and objectives of the class constantly in mind. If the teacher forgets these aims and objectives it is nothing but a waste of time for him and his students as well.

Ericson[7] mentions this point by saying, "Willingness to go to work and interest on the part of the student will depend greatly upon their understanding of the purpose of the course."

Declaring The Objectives

General Education Objectives. The objectives for junior high school that Ericson uses were developed under supervision of C.L. Nibart and are divided into three groups: number one, the general objectives, number two, the exploratory objectives; number three, the prevocational objectives. The outline is as follows:

I. General Education objectives

   a. To satisfy that desire in every boy to express through the medium of tools and materials.

   b. To develope the "handyman" abilities through repair and construction for home, shop, and office use.

   c. To assist in better choice and use of industrial products and services.

   d. To gain a sympathetic attitude toward the laboring man, with an appreciation of the importance of the work he does.

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[7] Emanuel E. Ericson, Teaching Problems in Industrial Arts. Peoria, Illinois: The Manual Arts Press, 1940. p. 42.

e. To give the boy an avocation or hobby.

f. To develop habits of neatness, orderliness, cleanliness and the like.

II. Exploratory Objectives

a. To try our individual inclinations and abilities for industrial pursuits.

b. To make realiable studies of the conditions, demands, and opportunities in related occupations.

c. To appreciate economic production by first hand experiences in production work.

III. Prevocational Objectives

a. To extend the try-out activity to meet the preparatory vocational needs of the pupil who expects to enter a vocational school with the minimum of preparation.

b. To provide for individual needs of pupils who would not remain in school for academic education alone.

Secondary Education Objectives

Friese[8] divides his objectives for the junior high school into two groups, they are: (1) the manipulative, and (2) the nonmanipulative as follows:

I. Manipulative aims:

a. To provide opportunity to make and do things they like to make and do.

b. To provide training in common skills everyone should possess.

c. To provide trade exploratory or try-out experiences in typical trades, or assist in finding and testing interest and aptitudes.

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8 John F. Friese, Exploring the Manual Arts.. New York: The Century Company, 1936. pp. 41-42.

II. Nonmanipulative aims:

a. To provide training in common skills every one should possess.

b. To provide interesting technical information about the occupations represented in the schools shop, and others closely allied.

c. To provide studies in vocational economics closely related to every-day life.

d. To provide a natural medium for guidance, education, vocational.

e. To provide organized training in reasoning and problems solving.

The senior high school objectives all about the same as those for junior high school. Excluding the objectives already mentioned, there are three that have their supporters: The vocational objective, the technical objective, and the managerial objective.

The Teachers' Objective. Due to the fact that we mention before, that the teacher must always keep his objectives in mind, if he wants to help the student. Let us see what Bawden[9] has to say about the objectives of the industrial arts teacher.

1. To develop in pupil an active interest in industry and in industrial life, including the methods of production and distribution.

2. To develop in each pupil the ability to select wisely, care for, and use properly the things he buys or uses.

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[9] William T. Bawden, Industrial Arts in Modern Education. Peoria, Illinois: The Manual Arts Press, 1944. pp. 33-34.

3. To develop in each pupil an attitude of pride or interest in his ability to do useful things.

4. To develop in each pupil an appreciation of good workmanship and design.

5. To develop in each pupil a feeling of self-reliance and confidence in his ability to deal with people and to care for himself in an unusual or unfamiliar situation.

6. To develop in each pupil the habit of an orderly method of procedure in the performance of any task.

7. To develop in each pupil the habit of self-discipline which requires one to do things when it should be done, whether it is a pleasant task or not.

8. To develop in each pupil the habit of careful, thoughtful work without loitering or wasting time (industerious).

9. To develop in each pupil an attitude readiness to assist others when the need and to join in group undertaking (cooperation).

10. To develop in each pupil a thoughtful attitude in the matter of making things easy and pleasant for others.

11. To develop in each a knowledge and understanding of mechanical drawing, the interpretation of the conventions in drawings and working disgrams, and the ability to express ideas by means of drawing.

12. To develop in each pupil elementary skills in the use of the more common tools and machines in modifying and handling materials, and an understanding of some of the more common construction problems.

In this chapter we have merely touched on the needs, purposes, the types of programs that we have and need more of in industrial arts. We have also dealt on the importance and the objectives of industrial arts in the junior high school.

If our various systems could just enrich the programs we have in our said communities, that will be a gaint step toward more progress. Also if those schools that do not have industrial arts, at the junior high school level, could start a small program. Those students in that locale, will have a chance to learn now, and compete later in this vast industrial complex that we have.

Lawrence V. Calvin[10] sums up some objectives of industrial arts in these words.

Let us all examine our courses and methods and add more learning experiences which will cause our students to acquire a greater assumption of responsibility in helping to correct the attitude of nonproductivity which threatens even our moral existance. Let us remember that we are not just teaching industrial arts for the sake of knowledge and skill invalued, but that we are teaching youth to live pleasantly, profitable, and harmoniously in a free society where each must assume his proper share of responsibility. Let us develop in students a real love for work.

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[10] Lawrence V. Calvin, "Our Industrial Arts Objectives," Industrial Arts and Vocational Education, XXXVII (May, 1948), p. 195.

If the administration of our industrial arts courses were carried with the student and the material in mind. Then the purpose and the techniques of production would come very easy. The more that we can get every one involved in the process of education period. Then the job of the industrial arts teacher would not be nearly as hard.

CHAPTER III. THE CONTRIBUTION OF INDUSTRIAL ARTS IN THE SCHOOLS

The industrial arts teacher has a greater opportunity than any other teacher to give his students vocational information. No one connected with the schools knows as much about the opportunity and requirements of the occupations connected with the shops as the teacher of industrial arts.

It is assumed that the industrial arts teacher actually knows the opportunities and requirements of occupations connected with industrial arts. It is also assumed that he knows how to do vocational counseling. If the teacher does not know, he should obtain special preparation.

I. Vocational Information

Vocational Information. What the teacher does must be done as part of a well coordinated program of vocational counseling and not independent of it if such a program is carried on by the school.

Friesel[1] has this to say about vocational education:

Vocational education should equip the individual to secure a livelihood for himself and those dependent on him, to maintain the right relationship toward his workers and society, and, as far as possible, to find in that vocation his best development.

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[1] John F. Friese, Exploring the Manual Arts. New York: The Century Company, 1936. pp. 41-42.

Vocational Objectives. Listed below are the vocational objectives as complied by Gordon O. Wilbur and presented by V.L. Bowers[2]:

1. To explore industrial civilization in terms of its organization, raw materials, processes, operation, products, and occupations.

2. To develop recreation and a vocational activities in the area of constructive work.

3. To increase an appreciation of good craftmanship and design, both in products of modern and in art-crafts from material culture in the past.

4. To increase consumer knowledge to a point where students can select, buy, and maintain the products of industry intelligently.

5. To provide information about the basic processes of many industries, in order that students may be more competent to choose a future vocation.

6. To encourage creative expression in terms of industrial materials.

7. To develop desirable social relationships, such as cooperation, tolerance, leadership, fellowship, and tact.

8. To develop a certain amount of skill in a number of basic industrial processes.

Vocational Skills. Vocational skills are developed by many methods. One would be by teaching the students how work is done in the different factories and industries, another would be by taking the students personally to see just what is being done and how.

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[2] V.L. Bowers, "Industrial Art Teachers Keep Step," Texas Outlook, XXXII (December, 1958), p. 25.

Community Interest. It is important to get the whole community involved in the industrial arts program. Vaughn[3] has this to say about industrial arts in the community:

The very hope and salvation of industrial arts work of the non-vocational type lie in the effective tying up of such work with the vital activities of the schools, the business, and the industries of the community.

Some examples of this is doing boy scout work, making articles for charities, building props for schools, et cetera.

It has been stated that our teachers of industrial arts should have a good background in vocational work. The shop teacher needs not only the same culture but also the same refinement that is demanded of other teachers in the school system.

Industrial Arts in the small Schools

The need of industrial arts in our smaller schools is such an important item that we can not let it go unnoticed any longer. It is something that we will have to get busy and work on. One way to get it started is by exploration, followed by setting up programs in strategic areas to be observed by school authorities.

If we are to educate the public on the need of industrial arts, we should be able to find the need and show it in a way that they will understand.

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[3] Samuel J. Vaughn and Arthur B. Mays, Content and Methods of the Industrial Arts. New York: The Century Company. pp. - 165-175.

EXPLORATION

Finding a Need. Everett[4] in his article "Vocational Education for the Small Community," states:

For ages men of the sea have looked from the crows' nest for a sight of new land, a new land toward bigger and better things. The sailor in the crows' nest has an objective outlook. He is concerned with a spot which is appearing on the horizon. Only on closer inspection and intensive exploration can be determine the true value of his discovery. Possibly his discovery will be the spark which will start a new trend which may add considerably to man's way of living.

Industrial educators also must climb into the crows' nest from time to time for an objective view of new things which are appearing on the horizon. Many new opportunities are passing without notice because the teachers are too busy on decks of their ships. The field of industrial education is going to expand in many directions; it is the teachers job to investigate any worth-while growth and assist in its promotion.

The school can not justify the flooding of any occupation with unskilled workers. Its product must be of a high standard and its volume of output as great as the absorbing power of the market. Unseen forces will defeat the

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[4] Delmer E. Everett, "Vocational Education for the Small Community," Industrial Arts and Vocational Education, XXX (March, 1951), 33-35.

school's efforts unless scientific methods are used to determine these factors. Close cooperation between the school and labor will tend to improve the functioning of such a program.

How These Needs Can Be Met. Many simple errors may eventually short circuit a diversified occupation program unless a special effort is made to avoid them. Great criticism will result if errors are made and allowed to accumulate. To uphold the standards of industrial education, the program must be built upon a sound foundation, eliminating all inferior material which may eventually weaken its structure and cause its collapse.

Students are constantly asking for more industrial arts training. The need for this training is apparent when the occupational condition of the country is reviewed. Like the sailor in the crows' nest, industrial educators must keep their eyes constantly on the horizon to avoid missing any important trend which may improve the present position. Youth must be given greater opportunity and this will evolve only if the problem is carefully and objectively studied.

In summation let us again look at the needs and how these needs can be met. These needs can readily be seen by the fact that in so many of our small schools that do not offer industrial arts, many of the boys drop out because they have found nothing to interest them. When these boys leave, where do they go? They ususally wind up searching for something to do, but can not find it because they have never become interested in anything. They may wander around for awhile until eventually they become trouble makers.

The above is only an example, butmany times such cases have happened. It is likely that had these boys been given the opportunity to take some courses in industrial arts they would have found an interest and our state and country would have gained many valuable citizens.

CHAPTER IV. THE DEVELOPMENT AND ORGANIZATION OF AN INDUSTRIAL ARTS PROGRAM

I. Curriculum

A very important item that we must consider in our small schools is the development and organization of the curriculum of the industrial arts program.

The following questions that can be used as a basis for or against adopting new industrial arts courses in the school are given by Ericson:[1]

1. Does the type of work proposed represent a broad typical industrial activity?
2. Is it rich in educational activity?
3. Does the subject lend itself to the school procedures?
4. Does the subject suit the ages and naturity of the students?
5. Is the cost of instalation reasonable?
6. Are materials too expensive?
7. Is there local representation of the activity?
8. Are teachers available?
9. Are students interested?
10. Is there time in the schedule?
11. Is the superintendent or principal enthusiastic?

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[1] Emanuel E. Ericson, Teaching Problems in Industrial Arts. Peoria, Illinois: The Manual Arts Press, 1940. p.42.

12. Is local sentiment in favor?

13. Is it the teacher's pet?

II. Subject Matter

Selection of subject matter. The procedure for locating subject matter and giving it to the teacher for the purpose of industrial arts teaching is put fourth in these four steps by Ericson:[2]

1. Determining upon objectives for the activity.
2. Analyzing the industry, trade, or field of activity from which material is to be drawn for the content of the course.
3. Evaluating items in this analysis as to their contributions in attaining the objectives, and accepting the suitable ones.
4. Organizing the selected subject matter into a suitable form and order for presentation to a class--the making of the course of study.

Testing the Subject Matter. The best way to test the subject matter of any curriculum will be to look at the subject matter in the light of the objectives set up for that particular course. A chart may be used which includes the objectives and curriculum. If the subject matter of the course meets all the objectives then it has a perfect score.

Community Resources. The shop teacher has more opportunity than the teacher of any other subject to use community resources for his teaching. Some of the ways to enrich a curriculum by utilizing these resources is to visit factories,

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[2] Ibid., p. 42.

by talks from successful people in the community, and by co-operating with trades people of the community.

The teacher of shop courses schoul make a place in his activity to meet the calls from the community. Vaughn[3] says:

> The school should reach beyond the wall of the building, for the industrial work to reach beyond the shops, for the activity of each department to mingle with those of other departments, and for the interests of boys to be extended beyond the little groove of the daily work. It holds out the enriched course of study, the correlated program, the vitalized contact with man, and activities of the industrial business, and professional world. And it finally urges the use of various devices for making the home again the center of interests directed by kindly interest and sympathetic wisdom of the public school teacher.

III. A Course of Study

The Need for Changing. A course of study should be made by the teacher to help him in his daily work. A course of study is never complete and is always in a constant state of change. It is not satisfactory to those who formulate it. New subject matter, methods, changes in industry, objectives, aims, teaching devices, illustrative materials and past and present studies and experiments all keep a course of study in constant turmoil.

Even though the teacher has made up a course of study, he should not stick to it completely. There are many changes necessary. There are individual differences in children that the teacher must realize. The course of study should be used as a guide and not as a law.

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[3] Ibid., pp. 165-175.

This point is expressed by Bawden:[4]

> No phase of modern life is more dynamic and changing than industry. A course in industrial arts, which reflects industry, is in need of a constant revision. Industrial, economics, social, and even political changes demand changes in courses of study.

Types of courses of study. Ericson[5] has this to say about the two types of courses of study:

> From the standpoint of scope favored, courses of study may fall into types: (1) the unit course, covering as is indicated, a small unit of work; or (2) a comprehensive course or curriculum for complete offering in a certain subject as woodwork, for first, second, third, and fourth years of high school. From the standpoint of treatment on the otherhand, a division may be made into: (1) the abridge or skelton course; and (2) the detailed or illuminated type.

The detailed course of study is a great help to the inexperienced teacher, because this type of course includes the necessary tools, equipment and procedures in carrying out the teaching methods. This will save the teacher time in organizing the class.

IV. Material and Equipment

Selection. One of the most important duties of the teacher is the selection of material and equipment. This is a job that must have some carefully made plans set up. Vaughn[6] lists three principles that should be followed by every

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[4] Ibid., pp. 33-34.

[5] Ibid., p.42.

[6] Ibid., pp. 165-175.

teacher in selection of material and equipment:

1. Formulate a very definite statement of the kinds of work to be undertaken, the purpose of the work to be done, and the course to be pursued.

2. Plan an ideal equipment to meet the statement indicated in step number one without regard to the course, housing facilities, or other local consideration.

3. Modify the ideal equipment to meet the limitation and the needs of the local situation.

Vaughn[7] also has three factors that constitute the selections of the equipment and materials for the school shop. They are as follows:

1. The kinds of work to be offered constitute the first factor.

2. The second large factor that determines the general character of the equipment is the exact purpose of the work to be done.

3. The course of study to be pursued furnish the third general factor.

A very important factor that should be considered in the selection of equipment and material for the shop is the community resources. When you start to build a shop you should find out just what the community is willing to pay. A point in this is stated by Newkirk[8]:

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[7] Ibid., pp. 165-175

[8] Louis V. Newkirk, Organizing and Teaching the General Shop. Peoria, Illinois: The Manual Arts Press, 1957. p. 21.

> In the end, the best-equiped shop is one which has used its available resources to buy equipment that will be of value in presenting industrial arts content suitable to community needs.

Teaching Devices. Teaching devices and illustrative materials are not something new, they have proved their worth in many other fields and are becoming popular in the field of industrial arts. The types of visual aids that are used in other fields of teaching can be very useful in teaching industrial arts. Some of these are motion pictures, slides, charts, models, pictures, et cetera. A great many of the devices may be procured for a nominal fee or at no cost through tool companies at all which manufacture shop tools. These companies gladly distribute this material which is used also for advertising purposes.

Teaching Methods. Some of the methods for teaching industrial arts are: The project method, the demonstration method, and the lecture method. The first two are the most important in this field. Bawden[9] states:

> Industrial arts teachers were among the first to make practical application of the discoveries and teachings of psychologists on the subject of individual differences.

The reason for this is that in shopwork the individual differences can be seen more clearly in the quality and quantity of the work accomplished. Not only are they known to the teacher but also he must adjust his teaching to bridge the differences that academic teachers do not. The differences

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[9] Ibid., pp. 33-34.

of ability and achievement are seen by the pupils in the shops and drafting rooms as well as by the teacher. In other classrooms they are not as prominent.

Much has been said in recent years about the 'project method' of teaching. In varied forms this method has been used successfully with all ages and grades from kindergarten to college. This method has been used to some degree throughout the entire history of industrial arts. The term "project" as used in shopwork has no connection with the 'project method' used in teaching. Ericson[10] gives Lauback's definition to the project as used in industrial arts as ("an intellecturalized, wholehearted, purposeful unit of activity preceeding to completion in a social environment on natural setting).

V. Administration

Because of its dynamic nature industrial arts developments in a school system should be the responsibility of some individual with a sound educational background, a familiarity with modern industrial practices and developments, a philosophy of life broad enough to interpret the present social order, and an ability to present the case of industrial arts whenever the whole educational program is underway.

I. The Physical Setting

The space arrangement. Because of the equipment required

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[10] Ibid., p. 42.

and the necessity for pupils moving about rather than sitting at fixed desks, an academic classroom is not large enough for a shop. You will need assembly space, working space, storage space, classroom and seating arrangements, tool rooms, lighting, and good ventilation.

Equipment. In selection of equipment you should take into consideration cost, selection, purchase, arrangement, installation, use, and upkeep. If these things are taken into consideration you should not have any equipment problems.

Supply. Among the sources of supply for textbooks and reference materials are the following:

1. Publishing houses
2. Donations
3. Available newspapers
4. City school departments
5. State department of education
6. Office of education
7. Research department

Schedule and loads. As far as the teacher is concerned, he should be involved in his own subjects if possible. He should have at least one hour a day that can be used as conference time for his students.

Records. The teacher should also have a filing system to take care of classifying and reference materials.

In this chapter it has been found that the organization and teaching of industrial arts is a problem that requires planning and good judgement on the part of the teacher. The physical setting including space arrangement, equipment, supplies, schedule, loads, and records has been discussed. Newkirk[11] ways this about organization and administration:

> The organization and teaching of the general shop is a problem that requires planning, and good judgement on the part of the teacher.

Care of supplies, the shop foreman, shop numbers, took checking and a record system are important management devices. Industrial instruction, group instruction, class instruction, demonstrations, projects, textbooks, reference materials, related talks, tests, motion pictures and slides, charts, class examination, and the shop library are fundamental teaching devices in any shop. The general shop teacher must have a course of study, textbooks, construction materials, and a well-equipped general shop before he is ready to teach a class.

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[11] Ibid., 165-175.

CHAPTER V. Summary, Conclusions and Recommendation

Summary. In summation let us look again at some of the suggestions that will enhance and enrich a program of industrial arts in the junior high schools. So many small schools do not even offer industrial arts. The schools that offer it, offer it only to boys and the girls are left out. These schools do not realize that girls need an interest. Unless this interest is found the girls will become drop-outs. When the girls leave, they will search for something to do and somewhere to go. They may wander around for awhile until eventually they become trouble makers.

The Texas program of industrial arts has been growing by great strides in the past few years, but it is still lagging behind some of the other states.

With Texas ranking 38 in base pay for teachers, better teachers will not be attracted to the Texas School especially industrial arts teachers.

It is intended that this material will be beneficial to the teacher, administration, and the community where industrial arts programs are lagging or need enrichment.

One way Texas could improve her industrial arts program on the junior high school level, is to start county industrial arts clubs and organizations.

Industrial arts offered in the elementary grades will

prove beneficial in helping the student to find himself at an early age. Industrial arts should be offered to all of the students of all of the schools especially at junior high school level.

Conclusion: There is a profound need of industrial arts on the junior high school level. With more training on the part of the industrial arts teacher the programs through out Texas could be enriched emincely.

The growth and interest in the expansion of industrial arts to our smaller schools and been rapid in recent years, but because of the slow start of industrial arts in Texas, it will take a lot of hard work on the part of the teacher, administration and the community to put industrial arts in the junior high school on the level where it should be.

Recommendations:

The schools that need to reorganize their industrial arts programs that are not up to par should do so with out a long lapse of time.

That the administration take a closer look at its industrial arts program so it can meet these needs.

That the community take an interest of the industrial arts offerings on the junior high and high school level, and work along with the school administration to improve the conditions.

That there be an industrial arts course taught at the college level to improve the teachers of industrial arts on the junior and the senior high school level.

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PRAIRIE VIEW AGRICULTURAL AND MECHANICAL COLLEGE
Prairie View, Texas

GRADUATE SCHOOL

An Evaluation of Graduate Student's Eligibility for the Master's Degree, as reported by members of the Committee conducting the Final Comprehensive Examination.

1. Name of the Graduate Student Carolina Lee

2. Examiner's Evaluation of this Student's responses during the Oral Examination: (Please check the most appropriate evaluation or give a statement of personal evaluation).

   a. ✓ Responses indicated that the candidate was well-poised an and able to answer freely and without serious inhibitions.

   b. ___ Responses indicated that the candidate has an excellent fund of information pertaining to his major field.

   c. ___ Responses were logical and well-thought out.

   d. ___ Responses were somewhat slow, but showed ability to reason.

   e. ___ Responses indicated that the candidate was lacking in important facts pertaining to his or her major field.

   f. ___ Responses indicated that the candidate was extremely nervous and ill-at-ease.

   g. ___ Other evaluation: _____

3. Examiner's Recommendation as to whether or not this student should be recommended for the Master's Degree:

   a. ✓ Recommended without qualifications.

   b. ___ Recommended with doubts as to his ability to go much farther in his graduate career.

   c. ___ Recommended on condition that the candidate be specifically discouraged from any further graduate study.

   d. ___ Not recommended for the degree at this time.

   e. ___ Other recommendations: _____

Date may 5, 1970 [redacted]
Signature of Member of Committee

PRAIRIE VIEW AGRICULTURAL AND MECHANICAL COLLEGE
Prairie View, Texas

GRADUATE SCHOOL

An Evaluation of Graduate Student's Eligibility for the Master's Degree, as reported by members of the Committee conducting the Final Comprehensive Examination.

1. Name of the Graduate Student Cornelius Lee

2. Examiner's Evaluation of this Student's responses during the Oral Examination: (Please check the most appropriate evaluation or give a statement of personal evaluation).

   a. ✓ Responses indicated that the candidate was well-poised an and able to answer freely and without serious inhibitions.

   b. ✓ Responses indicated that the candidate has an excellent fund of information pertaining to his major field.

   c. X Responses were logical and well-thought out.

   d. ✓ Responses were somewhat slow, but showed ability to reason.

   e. ✓ Responses indicated that the candidate was lacking in important facts pertaining to his or her major field.

   f. ✓ Responses indicated that the candidate was extremely nervous and ill-at-ease.

   g. ___ Other evaluation: fair to include his minor field

3. Examiner's Recommendation as to whether or not this student should be recommended for the Master's Degree:

   a. ✓ Recommended without qualifications.

   b. ___ Recommended with doubts as to his ability to go much farther in his graduate career.

   c. ___ Recommended on condition that the candidate be specifically discouraged from any further graduate study.

   d. ___ Not recommended for the degree at this time.

   e. ___ Other recommendations: Need to make some corrections in his thesis

Date 5-5-70 [redacted]
Signature of Member of Committee