Relationship of Industrial Arts to Occupational Orientation

by

Donald Maley
Professor and Head
Industrial Education Department
University of Maryland
College Park, Maryland

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Occupational orientation is one of a series of titles attached to a movement that is reaching into nearly all levels of public education as well as into a broad range of school subjects. Other titles in this movement include career education, career development and occupational education. The truth of this matter is that even at the national level there is not a clear and precise definition associated with the concept around which all of these are generated. I will use the terms occupational orientation and occupational education interchangeably throughout this discussion.

It is significant that your conference deals with the concept of occupational orientation, simply because it is one of the principle issues in education at this time. I have long maintained that Industrial Arts must concern itself with this matter and I have been an out-spoken critic of those who have refused to accept it as a valid function of this area. Occupational education has become

a high priority national issue and it has become a major concern among our top educational planners.

The November 21, 1971, Baltimore Sun contained an article indicating that --

> "Career education is to receive top priority in the nation's schools. The United States Office of Education has allocated $4.6 million to develop career education models for large-scale changes in the curricula of elementary and secondary schools."
>
> (p. K12)

The September 22, 1971, issue of Manpower and Vocational Education Weekly contained the statement that --

> "...Commissioner Sidney P. Marland, Jr., plans to release $9 million for fiscal 1972 'discretionary' funds to help each state 'build' its own career education model programs while the federal agency moves ahead with development of its versions,..."
>
> (p. 5)

The August-September, 1971, issue of American Education showed an additional $18,000,000 for the improvement of educational preparation for careers under the Cooperative Research Act (Amended by ESEA - Title IV). (p. 44)

Industrial Arts must move more positively in the direction of those national concerns where it can play a significant role, and this is one such concern that has great potential for putting Industrial Arts out in front. It is

my contention that more and more education will be compelled to focus on societal issues and problems. It also is my feeling that Industrial Arts or any school subject must have a quality of flexibility and adeptness that will enable it to function as a dynamic harmonic with the societal rhythms of change, emphasis, and human need. I believe this to be a real and genuine challenge to Industrial Arts.

Our particular concern is the relationship of occupational orientation to the specific area of Industrial Arts. The fluid nature of interpretations associated with the terms "occupational orientation" as well as "Industrial Arts" may cause serious problems in themselves, but it is worth more and deeper dialogue if education is to seek newer levels of meaning and relevance.

As a point of clarification, the following definition of Industrial Arts describes the subject area in which the discussion will be based.

> Industrial Arts as a curriculum area is defined as those phases of general education which deal with <u>technology</u>--its evolution, utilization, and significance,--with <u>industry</u> --its organization, materials, occupations,

processes and products,--and with the problems and benefits resulting from the technological and industrial nature of society.

It is important to note that even though the word occupation appears only once in the definition, there is a great deal of relevancy in all facets of the definition as regards occupational education.

A second point of initial clarification deals with one's concept of education and the role of occupational orientation.

One must first get at the goal of occupational orientation. Why, as educators are we interested in this area of national concern? Is it because there is a possibility of a federal grant lurking in the bushes? Is it because we have need for plumbers, carpenters, programmers, welders, shoe salesmen, or service station attendants? Or, is it because we have a fundamental and honest desire to fulfill the commitment of education in this democracy?

The goal of education in America is tied to individuals and the enabling of each individual to become what it is

possible for him to become as a valued and contributing member of society.

It would seem to me that the goal of occupational education would have some relevance to enabling the individual to eventually arrive at that decision which would provide for the greatest degree of compatibility between himself as a human being, and the position he chooses to enter as a respectable, productive citizen.

This can be accomplished only if we are willing to start with the assumption that a basic understanding of self is primary. This of course assumes that the individual is to make the decision and that it will be based upon realistic, attainable goals with as broad an understanding of the alternatives as is possible.

Occupational education is not a new topic in discussions related to the content of Industrial Arts. Furthermore, it is obvious that there has not been a uniformity of agreement on the nature and position of such an objective or field of concentration.

Furthermore, the topic has some obvious polar positions that one can easily identify with the Industrial Arts profession. Although I have tended to develop what some would

call a polar position, it is a positive attitude towards the relationship between occupational education and Industrial Arts.

The thesis of the presentation is that -- there is a strong relationship, and the implications for occupational education are important and valid for Industrial Arts in an era so profoundly affected by industry and technology.

I will attempt to get to this position by the identification of some specific areas of relationship and implication. I also will attempt to identify problems associated with the involvement in occupational education in an age where the dynamics of change are literally incomprehensible.

As a matter of clarification of the above "position," I am compelled at the outset to more clearly point out the basic areas in which I do and do not accept the occupational education function as a major contribution of Industrial Arts.

One polar position that has some traditional as well as geographic sources would place Industrial Arts almost completely in the occupational or specific pre-vocational polar position. That is to say, the major function of Industrial Arts would be a narrow pre-vocational emphasis through the development of a select series of manipulative skills and a

defined series of informational items aimed at a select series of occupations. See figure 1.

A great deal of occupational education has been external in context. It has tended to stress that which is supposed to be "out there." It has tended to be about some remote, vague, inaccessible, and in many, many instances unattainable goal.

In its attempt to get to the point of being practical and specific, occupational orientation frequently has lost its sense of reality in the fragmented minutia of bits of information, selected manipulative skills and processes.

This posture is illustrated on the right-hand side of figure 1. However, it is to the left-hand side of that illustration that I would urge you to give your concerted efforts.

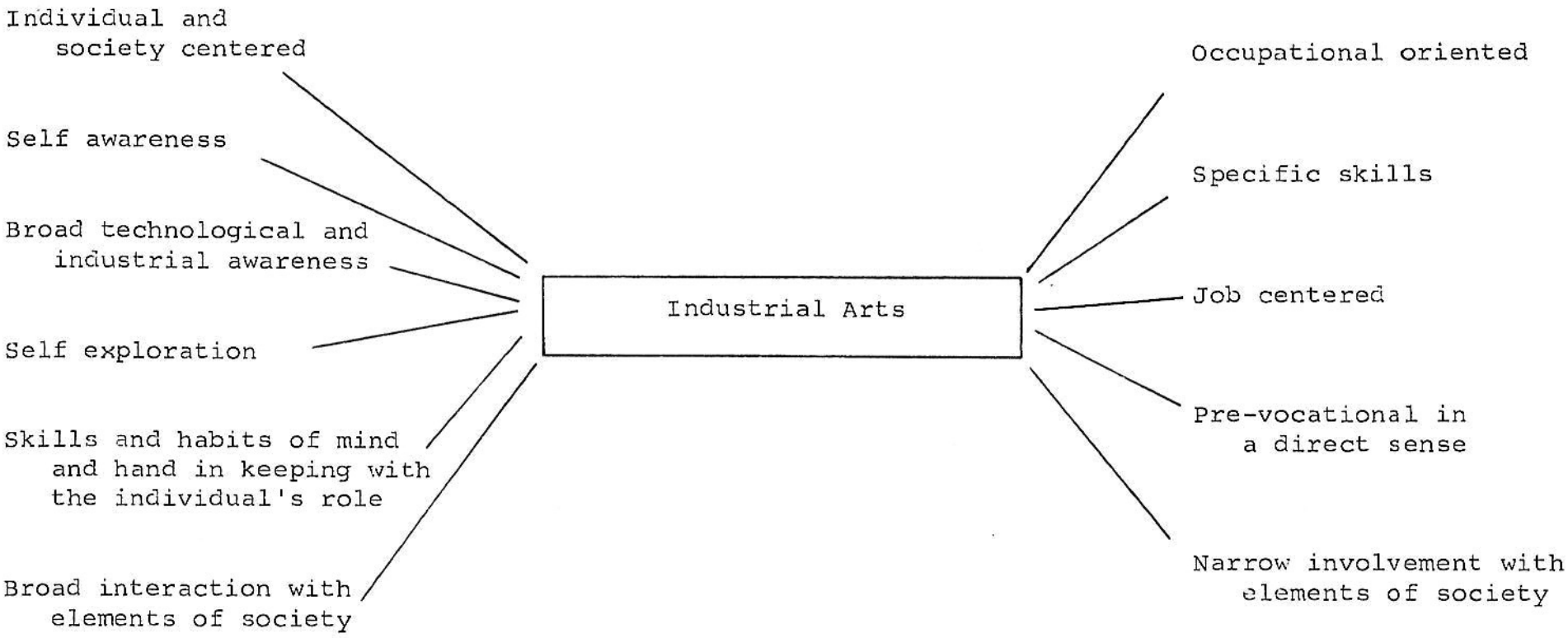
I am asking that we in education (not just Industrial Arts) give serious consideration to the development in each individual some fundamental understandings about his potential, his capabilities, as well as his emotional and psychological qualities. It is the only starting point. It is the starting with the individual as the center of focus that should constitute the initial concern.

Figur).

POSITIONS IN OCCUPATIONAL EDUCATION

FOR

INDUSTRIAL ARTS



This can happen only if we sincerely believe in it and are willing to put our time, talents, and facilities to its accomplishment. I do not intend to "kid" you that Industrial Arts can accomplish all that needs to be done in this regard. However, I am convinced that no other area has an environmental and pedagogical-philosophical arena comparable to that of the Industrial Arts laboratory in which to work with people as individuals. I also would urge that the profession move more broadly out into the arena of contemporary society for the background, information, and trends against which a course of action may be plotted.

Occupational education in the contemporary setting must concern itself with the following elements.

1. The changing occupational structure
2. The increasing mobility of people
3. The need for adaptability in people
4. The issue of occupational obsolescence
5. The phenomena of technological impact
6. The changing social patterns
7. The effects of technological developments
8. The long range outlook
9. The population growth
10. The changing educational patterns

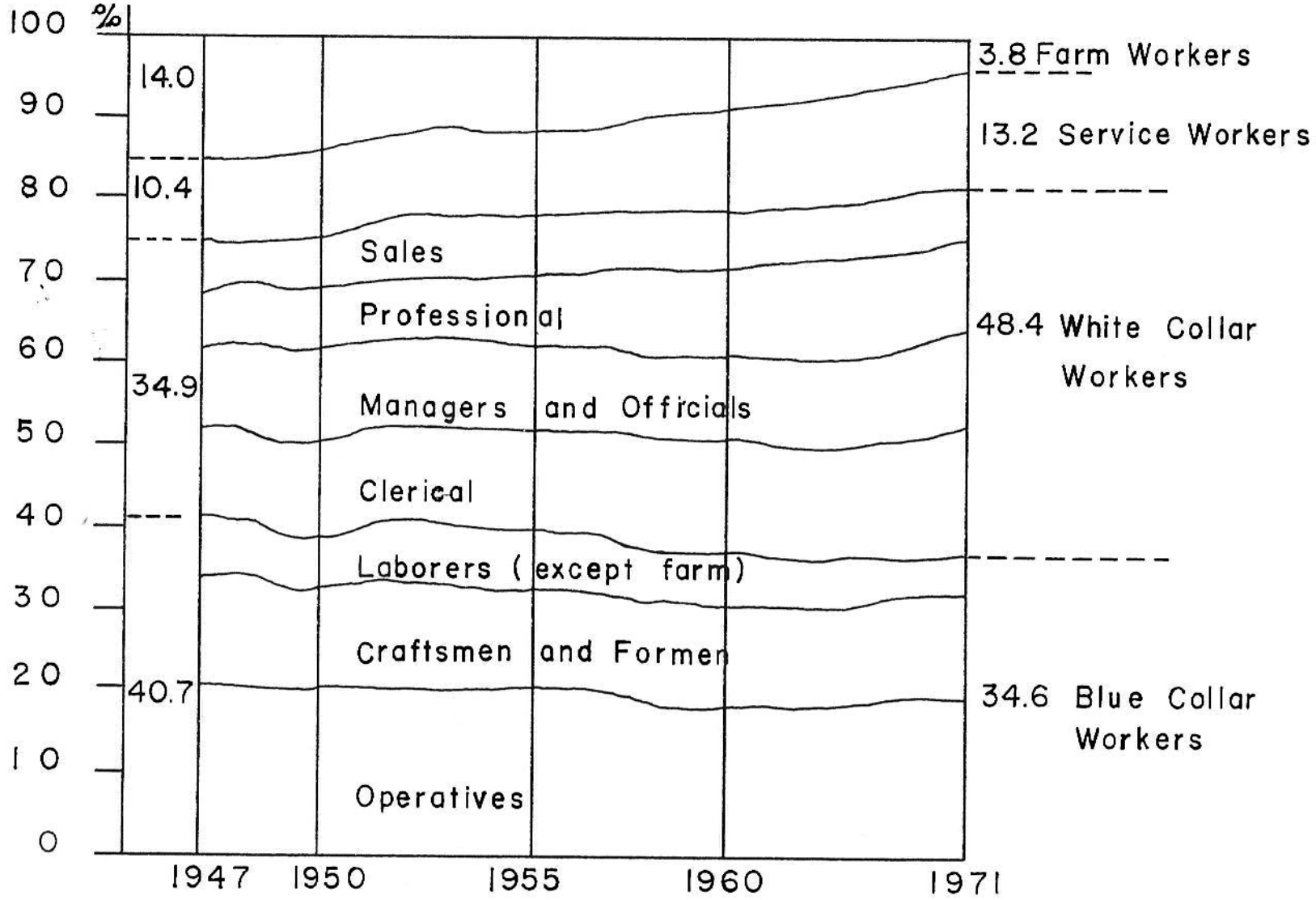
The discussion of occupational education and its relationship to Industrial Arts is an involvement in diversity with countless and varied occupations, a concern for a role for Industrial Arts, and a perspective on education in the contemporary society and the years ahead.

A recent edition of the Dictionary of Occupational Titles lists a total of 21,741 occupations. This figure contains 6,432 jobs new to the dictionary. Of interest and pertinence also is the fact that there are 8,000 fewer titles in the new volume. (2, p. 9) This latter fact is due to jobs becoming obsolete and the combining of several jobs into a single title.

Another major point that needs to be entered into the discussion is that the Industrial Arts student body consists of nearly every male at the junior high school level and a somewhat smaller proportion in the senior high school. That is to say, Industrial Arts is not dealing with just the future manufacturing personnel in the categories of laborers, craftsmen, foremen, or operatives. It is dealing with all segments of the population which includes the increasing numbers who will go into the human services, sales, managerial, clerical, technical, and the professional areas.

CHANGE IN DISTRIBUTION OF EMPLOYMENT BY MAJOR OCCUPATION GROUP, 1947-1971

Figure 2.



A third bit of information that needs to receive our attention is the trend of the occupational structure in the United States. Figure 2 depicts the change in percentage of the total labor market over a twenty-four year period for farm workers, service workers, white collar workers, and blue collar workers.

Figure 3 represents the structure of the work force as viewed by Dr. Norman Harris of the University of Michigan. As you will note this figure is radically different than the previous pyramid configuration that was so characteristic of the structure some few years ago.

A fourth very important factor involves the rate and nature of change due to technolgocal, economic, sociological, and political developments. The increased productivity per man, the knowledge and population explosions, the rise of social issues, and the increasing emphasis on education also are essential factors in a consideration of occupational education, for it (occupational education) does not exist in a vacuum, nor should it lie static while society continues to move.

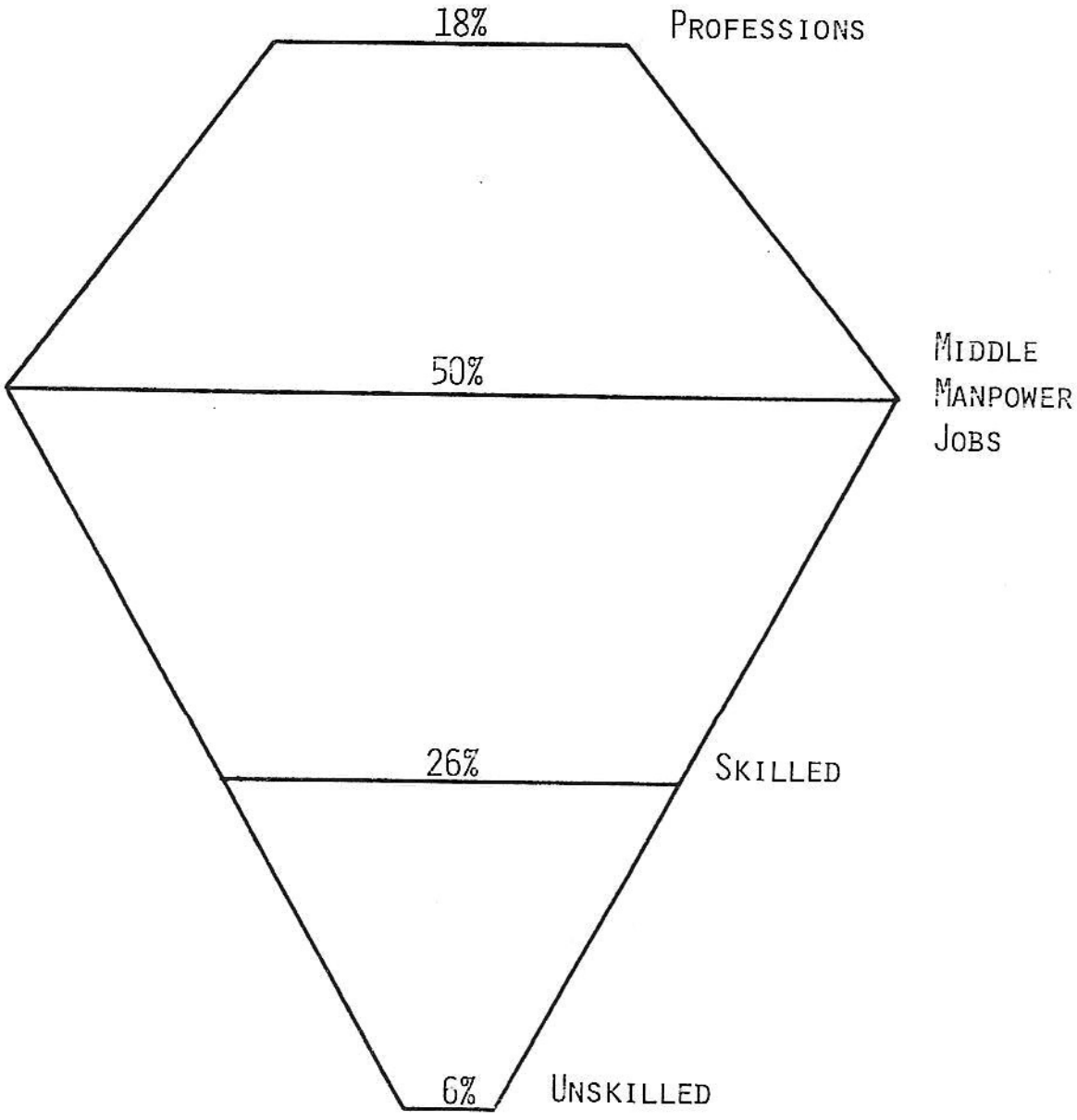
These broad areas of concern give rise to several basic questions that one might raise in the process of developing

FIGURE 3.

WORK FORCE 1970

PROJECTED BY

DR. NORMAN C. HARRIS, UNIVERSITY OF MICHIGAN



ideas for implementing meaningful and relevant occupational education through the Industrial Arts programs.

The Problem of Number and Diversity of Occupations in Relation to the Capability for Occupational Education in Industrial Arts

There are from 21 to 22 thousand different occupations in the United States. If Industrial Arts is to be serious about any "specific" occupational education, what infinitesimal small part of these thousands of occupations can it really deal with in the time allotted? (See figure 3) This problem is further sharpened when one applies such a fractional operation against a broad spectrum of the population that could eventually get involved in most of the 21 or 22 thousand occupations.

The Problem of the Proportion of the Population Served and The Proportion of the Population needed to Produce the Goods

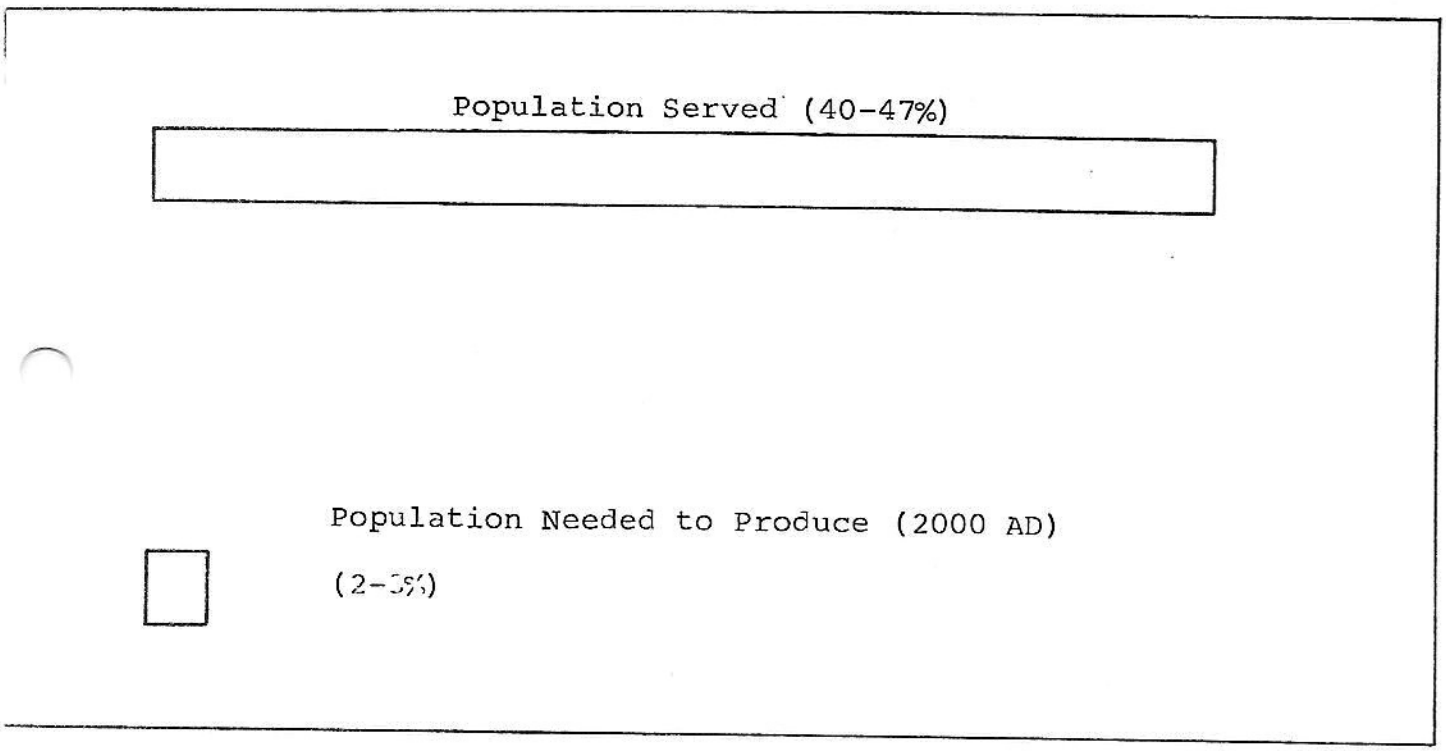
We are told that by the year 2000 it will require only two to three per cent of the work force to produce the goods that will be needed. If this becomes a reality, and the example set by agriculture leads us to believe it will, what will Industrial Arts' function be in a curriculum area that

Figure 4.

Population Served

vs the

Population Needed to Produce



Is the essential question one of--

the nature of occupational education?

serves 40 to 47 per cent of the total junior high school population (males) and has aspirations to serving nearly all of that population (both boys and girls)? (See figure 4.) I ask you to seriously consider this very important issue, that is, the relationship of the proportion of the population served by Industrial Arts and the proportion of the population that will be needed to produce the goods. It has a very significant bearing on the problem of occupational education and especially so at the junior high school level. The youngster in the seventh grade today will be only 42 years of age as we reach the year 2000, thus the problem becomes a pressing reality for the schools today.

The Problem of Occupational Change Due to Advances in Technology and Fundamental Changes in the Society

We are told that the rapidity of change experienced in the past twenty-five years is just a prelude to that which lies ahead. The acceleration of change in science, industry and technology has opened many new areas of occupational endeavor. This movement also has changed rather substantially thousands of occupations and in many instances greatly reduced the need for numerous others. (See figure 5).

Figure 5.

Some years ago in a regional vocational conference held in Washington, the participants were reminded that they must plan and prepare for occupations that did not exist. There is no doubt that this situation continues to be a hard reality that has not had the necessary thinking, planning nor preparation.

Major innovations and changes in the direction of American industry will come about through the expanded application of automation, cybernetics, computers, cyrogenics, bionics, microelectronics, and the wonders of communication.

As man moves away from a production centered society into a service mode and in the direction of solving man's pressing problems, new and vastly different issues will face the educator dealing with occupational education. This is especially true in a general education subject that has industry and technology for its base of content.

Some years ago this nation moved out of an agricultural economy into an industrial society. We have now moved into a post-industrial or super-industrial society and the weight of the economy has shifted from production to services.

Substantial increases in employment have been experienced in the social services, health services, recreation,

science, engineering, administration, accounting and controlling fields.

The dimension and nature of Industrial Arts involvement in occupational education is the issue that needs to be explored and the systems of involvement developed.

The Vocational Act of 1963 has had a significant role in a changing pattern of education and occupational preparation. We have witnessed the development of extensive and elaborate vocational facilities in area and comprehensive high schools, as well as at the post-high school level. This has given the high school Industrial Arts program the breathing space and opportunity to really stretch its image in the area of general education aimed at interpreting the industrial and technological nature of the society, as well as contributing to the growth and development of the individuals it serves.

I would like to submit three broad areas in which Industrial Arts can make a significant contribution in the area of occupational orientation.

1. The first and most important area of contribution is in the realm of the "self".

Occupational orientation, occupational education, career education, career development or whatever title you may

select can only start at one point, and that is with the individual. Plainly put, effective career planning must start with an understanding of the "self".

This point, of course, is based on the obvious assumption that the individual makes his own decision regarding his future life's work. I realize this might be an impossible dream for some, but I think we would all agree that it should be standard operating practice for most people.

Occupational education must start with the individual getting the fullest opportunity to understand himself in terms of his aptitudes, capabilities, interests, mental and physical characteristics, as well as the numerous other personal factors that relate to individual success, contribution and happiness.

The school has a particularly unique role to play in this process by providing the environment and a program that makes these realizations possible. The Industrial Arts area with its endless range of potentially meaningful human involvement is a natural setting for making a rich contribution to occupational education in the area of self-exploration.

Some years ago at the Los Angeles Convention of the American Industrial Arts Association, Dr. Walter Waetjen

presented an address titled "The Exploratory Function of Industrial Arts Education." A portion of this address with particular relevance to self-exploration was as follows:

> "That is, exploration rather than being a series of exposures to formal or 'canned' experience is, instead, a technique to be learned as one approaches a new situation. We, as adults, change our occupations or at least the places where we perform in our occupations, we change the communities in which we live, we change our institutional affiliations, Each change involves an exploratory period and those who make satisfactory adjustments are people who have learned successfully to explore a new situation. From this point of view adolescents and youth in an industrial arts program would be engaged in exploration to the extent that they are learning how to approach an area of industrial activity strange to them."

> "The second alternative has been suggested by educators who have stated in a variety of ways that the over-arching objective of education is to produce people who can live with satisfaction to themselves and of benefit to their society. This objective has an exact parallel in the psychological definition of a well adjusted person who, according to some psychologists, is one who fulfills his needs in ways which are both self-satisfying and acceptable to society. In each of these definitions there is a word germane to the present discourse. That word is <u>self</u>."

Samual Osipow in a discussion of Donald Super's theories of career development discusses the concept of self-knowledge in relation to deciding on an occupational goal at the ninth-grade level.

> ...This self-knowledge could be developed without specifically deciding on an occupational goal, which would be premature in the ninth grade. In fact, rather than restrict occupational possibilities at that age, the school should exert its efforts to broaden the student's occupational perspectives and to teach him to use available resources for exploration effectively.
>
> (3, p. 132)

Corollary to the "self-knowledge" precept is the juxtaposition of the development of the individual with respect to the timing of his Industrial Arts experiences.

In an attempt to establish a "time-line" or chronological justification for the role of Industrial Arts at the junior high school level, I have extracted a number of statements from an article titled: "The Critical Ninth Grade: Vocational Choice or Vocational Exploration," by Donald Super. (4, pp. 108, 109)

> If people are to make choices, they must have attitudes, an orientation toward life in general, toward careers in particular, and toward their present life stage especially, which facilitate the consideration of alternatives and the making of the required decisions... (pg. 108)

As to the matter of readiness to make vocational choices he comments that --

> Ninth graders are clearly in an exploratory stage, not in a decision-making stage, of vocational development ... (pg. 108)

Early in his article Super raised the question of "early identification for what?", and this is his reply ...

> ...not early identification for vocational choice or selection, but early identification for vocational exploration ... the identification of vocational potential in ninth graders should be designed to help with the making of decisions for vocational exploration rather than decisions of vocational preparation. (pg. 109)

The obvious points made by Dr. Super were in the realm of attitudes, orientation, and exploration. It is my contention that these are important and viable components or goals of a good Industrial Arts program.

2. Since the "self" as an organism does not live in a vacuum, it is imperative that the individual develop extensively as possible, what I will call, <u>societal awareness</u>. This is the second leg in the triangle associated with the contribution of Industrial Arts to the process of occupational orientation.

A prime requisite for effective participation in any society is to have a basic understanding of as many as possible of the elements that impinge upon the "decision" area(s).

The door is wide open for both the junior and senior high school programs to provide an instructional program

relevant to the much needed involvement with and interpretation of industry and technology.

The relationship of this goal of industrial and technological awareness with occupational education is direct and positive. An Industrial Arts program that provides a comprehensive involvement in a broad study of major industries is a vehicle for increasing the awareness of opportunities, conditions, contributions, and requirements associated with the world of work.

This same awareness can be developed in the various technologies associated with communications, power generation, construction, production, and the utilization of the natural resources.

Each ounce of awareness provides new dimensions of insight, possibilities, and challenges contributory to the goal of occupational education.

To engage in a comprehensive study of industry and technology provides an excellent avenue to attain that important developmental task of adolescents which is to "broaden one's experiences" as well as the goal of occupational exploration.

The key to this contributory element of "developing an awareness" is to make every effort to reach out in program

and student involvement so that the goal of occupational education has the width and breadth required to be of any assistance to the individual where freedom of choice and mobility are part of the system.

As a classic but powerfully unpopular idea, I have frequently proposed that every vocational trades and industries student should have a continuous program of Industrial Arts that would provide the means for the broad study of industry and its associated areas. Such a program would provide the vocational student with an awareness in the diverse aspects of industry and its opportunities, challenges, rewards, as well as an understanding of the organization, economics, geography, and sociology involved.

No other activity in the school experience has the potential for opening the vistas in a technological society and the world of industry comparable to that of the Industrial Arts. It can be a realistic and concrete experience as well as extensive "role involvement" in producing, planning, organizing, researching, and evaluating, in addition to the social aspects of industry in a manner that has little resemblance to the canned lectures, films, or essays on occupations so commonly employed in the area of occupational education.

3. The third area is what I will call "functional skills". This is the very important arena wherein the "power" and impact of the individual on his environment is developed. Specifically I refer to the following ideas with respect to the individual:

-- the development of the manual and manipulative skills,

-- the development of skills in problem solving and resourcefulness,

-- the development of communication skills,

-- the development of skills in social interaction, leadership, followership, cooperation, and involved participation.

The relationship of Industrial Arts to occupational education can be visualized in the form of an equilateral triangle with each leg providing an important interface with the other two. See figure 6.

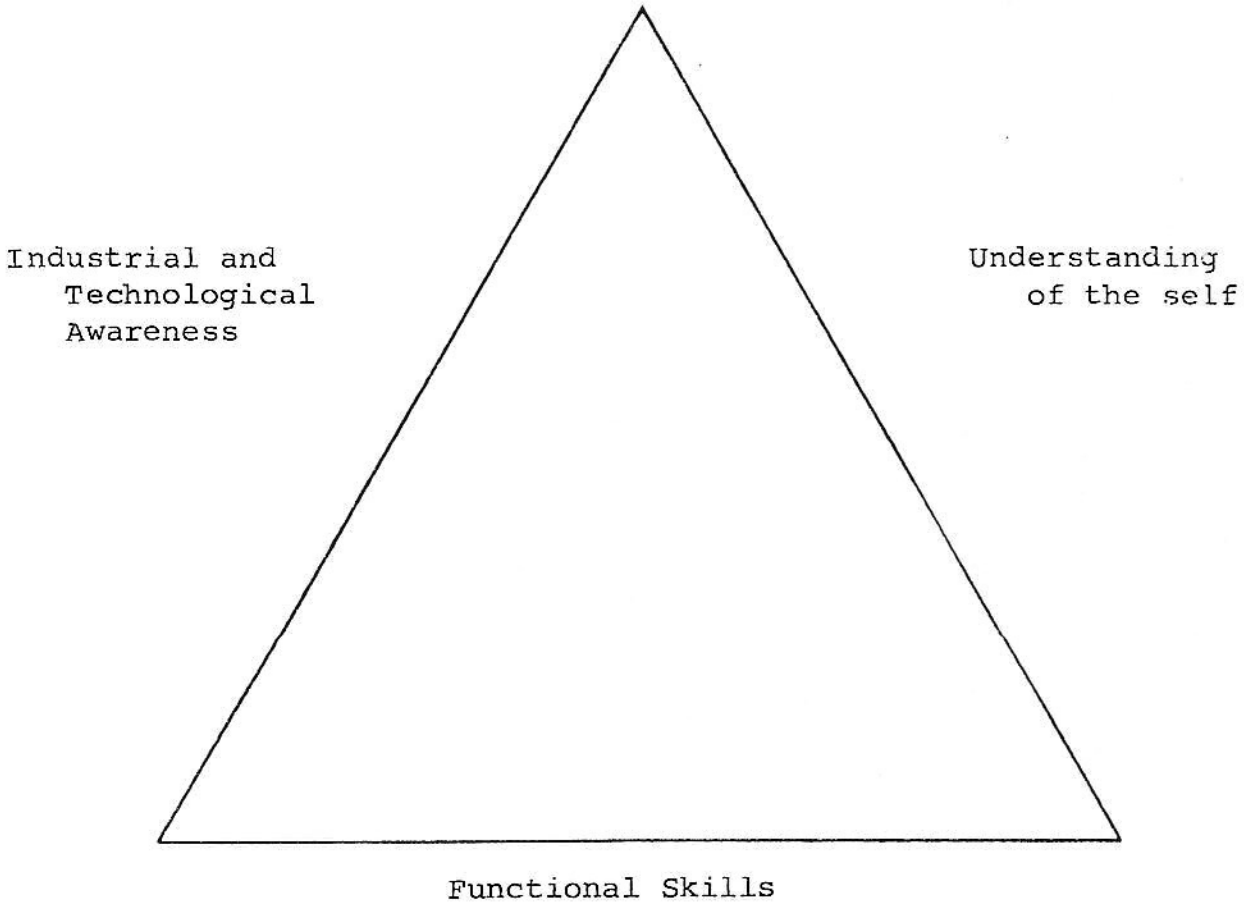
1. The first side is the development of as full an understanding of the self as is possible.

2. The second side is devoted to a broadening awareness of the world around the individual.

Figure 6.

The General Education

Contribution to Occupational Education



3. The third side is the development of fundamental skills which contribute to the realization of each individual's potential as well as his aspirations.

It is significant to note that each of these deals with the general educational development of people with no specific identification of fixed manipulative skills, jobs, or occupations. They are in essence broad areas of competence or understanding vital to effective occupational orientation. Each of these contributes to the realization of individuals, regardless of the nature and rate of change with which they are confronted. Each is basic and fundamental to the ultimate goal of occupational education.

The following quotation by Arthur W. Combs is a statement of a goal of education that has direct relationship to the point of this presentation:

> "The goal of education must be self-actualization, the production of persons willing and able to interact with the world in intelligent ways. To achieve that end, educators must concern themselves with both halves of the equation: the person and the world, the learner and the subject..." (1, p. vi)

I am fully confident that Industrial Arts can and must demonstrate its capability in the national concern for occupational orientation. The opportunity and the capability are there and all that is necessary is the resolve to do it.

I urge you to think in broad terms that will meet the challenge of a society characterized by unprecedented change and growth. I also caution you that the narrower you get in your perspective, the more you are inclined to play games with the lives of young people caught up in a captive system.

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