INDUSTRIAL ARTS PROGRAMS FOR ADULTS:
A STUDY TO DEVELOP PROCEDURES AND
PRACTICES WITH REFERENCE TO INDUSTRIAL
ARTS PROGRAMS WITH IMPLICATIONS FOR
ADULT LIVING.

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INDUSTRIAL ARTS PROGRAMS FOR ADULTS

A Study to Develop Procedures and Practices with Reference to Industrial Arts Programs With Implications for Adult Living

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The Ohio State University
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Approved by

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Adviser
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PREFACE

One of the prime objectives of every American institution, public or private, engaged in activities planned for the improvement of living standards of people everywhere, is the continual designing and planning of new and improved ways and means of seeking the good life. The important role industrial arts should play in the present atomic age becomes a significant aspect of American improved living standards in the areas of occupation, recreation, technology, and economics. This study attempts to point out the larger role industrial arts has yet to play in the school and community toward the improvement of adult living. This includes the delineation of productive outcomes that can be realized by adults in the home workshop, "do-it-yourself" activities, rehabilitation and therapeutic measures, recreation and camping improvements, and development of latent interests and skills.

To the Central State College Administrators, I wish to extend my appreciation for making this venture possible, and to the College of Education at The Ohio State University I am grateful for its role in supplying me with a rich background before this study was begun. I am specifically indebted to Professor William E. Warner, my adviser, for his able assistance and keen criticism of the entire work.
Especial gratitude is due to the members of the writer's committee including Professor Andrew Hendrickson, Professor Everett Kircher, and Professor Robert M. Reese for their counsel and encouragement in the course of this study.

During my visit to the veterans hospital at Chillicothe, Ohio, Mr. Hilton R. Jacob and his staff were very generous in their assistance. Dr. Marvin Stitts--Assistant Director and Mr. Charles Kemp, Coordinator of Mechanical Skills of the Mott Foundation in Flint, Michigan were very helpful and cooperative during my visit. Mr. Wallace Watkins, executive director of the Good will Industries of Dayton, Ohio, gave invaluable help in making his shops available.

To Dr. Delmar W. Olson of Kent State University for authorizing the use of the four functions of industrial arts as outlined in his Technology and Industrial Arts, my special appreciation must be expressed for this outline. The library staffs of The Ohio State University, Central State College, Xenia public library, and the Dayton, Ohio public library have always patiently and cordially endured my questions.

To the Dayton department of recreation, Mr. Clinton Churchman of the Y.M.C.A. of Springfield, Ohio, Dr. Edward Miller, Director of the Antioch College Continuing Education program, Mr. William Matthew of the Yellow Springs, Ohio, Senior Citizens Center, Mr. Edgar E. Best, Chief, Manual Arts Therapy, Veterans Administration, Washington, D.C. and many others too numerous to mention, thank you.

July 1961

Bryant Crawford
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CHAPTER I

THE PROBLEM AND ITS SETTING

Writers in adult and industrial arts education conclude that an important factor in the improvement of adult living lies in the provision of course opportunities for self-development in the public schools and colleges, and in rural and urban community recreational and rehabilitation centers. Such widespread opportunities, and programs, they contend, not only mobilize the latent capacities of individuals, but contribute markedly to their self-sufficiency, assurance, and therefore happiness. The zest and progress of the individuals participating in adult study programs are valuable outcomes of effective school and community adult education planning.

STATEMENT OF THE PROBLEM

This dissertation provides an analysis of ways and means for developing organizational procedures and practices toward the establishment of widespread programs of industrial arts education for adults, by a study of outstanding features of existing programs and implications for modification and next steps. It seems, therefore, that a study of these processes and implications would be valuable
in future expansion or improvement of industrial arts education programs throughout the United States.

The problem in this study is twofold. The first is to investigate representative industrial arts and allied adult education programs to discover salient features of the structures involved in terms of enrollments, curriculum, and community needs. The second is to draw implications from the derived facts, for enriched adult living. In this process several secondary problems are involved. The most difficult of these is the development of techniques in attracting adults through course offerings and wide opportunity for self-development. This problem is treated in Chapter V, with Chapters III and IV as necessary background for orientation and delineation of the problem.

Another secondary problem involves the planning of better designed programs that can be implemented with success by the adult in home workshops, "do-it-yourself" projects, rehabilitation or therapeutic activities, recreational and camping improvements, and all of these avenues contributing to the continual development of social or cultural interests and occupational skills. This is done in Chapter VI.

To identify implications for the industrial arts program for adults, it is necessary to study the various programs of adult education. The results should be directed to the development of rural, urban, and local
adult programs provided for improved living. These implications are for various organizations, schools, and colleges whether with industrial arts programs for adults or other groups similarly engaged.

SCOPE AND LIMITATION

With the ground work thus clarified, the scope of the study may be outlined as follows:

1. Chapter II presents a review of literature encompassing the history and nature of adult education, functions of adult education, psychology of adult learning, methods of teaching adults, present-day patterns of adult living, functions of industrial arts education, and industrial arts for adults.

2. Chapter III concerns the functions of industrial arts which serve as statements of the purposes for which industrial arts is intended or assigned.

3. Chapter IV provides details of exemplary industrial arts programs for adults in the United States with particular emphasis upon typical urban public day and evening school programs, rehabilitation of veterans, the Mott Foundation program at Flint, Michigan, community center projects in industrial arts, and the Central State College program.

4. Chapter V analyzes organizational procedures and practices of selected industrial arts programs encompassing
adult programs provided for improved living. These implications are for various organizations, schools, and colleges whether with industrial arts programs for adults or other groups similarly engaged.

LIMITATION

With the general work thus clarified, the scope of the study may be outlined as follows:

1. Chapter II presents a review of literature encompassing the history and nature of adult education, functions of adult education, psychology of adult learning, methods of teaching adults, present-day patterns of adult living, functions of industrial arts education, and industrial arts for adults.

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4. Chapter V analyzes organizational procedures and practices of selected industrial arts programs encompassing
such areas as financial support, curriculum offering, curriculum design and change, enrollments, and public relations.

5. Chapter VI presents some implications of the industrial arts programs for improved adult living.

6. Chapter VII presents an appraisal of outcomes of the study based upon observations, interviews, and findings. It also presents a summary of the findings with recommendations and implications for improved adult living.

The limitation of the study is apparent at the outset, because of the inadequate number of well defined industrial arts programs designed specifically for adult self-development and learning. The study, therefore, is concerned with five specific areas of restricted activity and not with the whole of adult education as it exists everywhere. The study is limited to an investigation and presentation of procedures and practices followed and the programs offered in five types of industrial arts programs for adults. From this investigation a body of facts is developed that contribute to improving existing programs and to developing others in schools and communities where adults do not have the opportunity to participate.
ASSUMED IMPORTANCE OF THE STUDY

One of the prime objectives of every American institution, public or private, engaged in activities concerned with the improvement of living standards of people everywhere is the continual designing and planning of new and improved ways and means of seeking the good life. Improvement is synonymous with change. A group of people bound by custom, habit, and tradition is often adverse to change. It is necessary, then, that education be ongoing and encompassing of a way of life that ensures progress and happiness.

It seems then that the role industrial arts should play in the technological, or atomic age, becomes a significant aspect of American improved living standards in the areas of occupational and recreational life.

This report should be of value to institutions in various communities engaging in such pursuits for those adults who seek self-achievement. It will show what is being done along these lines, how public schools and colleges tackle the task, what higher education is actively doing in bringing industrial arts to the adult, and the effects of the work done in rehabilitation, community centers, and other rural and urban neighborhoods.
RESEARCH TECHNIQUES EMPLOYED

The principal sources of data were:

1. Literature in the field of adult and industrial arts education.

2. A questionnaire for discovering what organizational procedures and practices were used by exemplary centers for adult education.

3. Interviews with administrators, teachers, and voluntary workers at various centers.

4. An observational survey of five specific types of adult programs.

The data were classified, arranged, and summarized. In essence the study produces a body of data in the form of the over-all pattern, structure, and next steps for industrial arts programs for adults. The application of these suggestions is up to the communities and the profession, who may thereby benefit numerous people striving for a better life.

TERMINOLOGY

Certain terms are now selected and defined which will facilitate the communication of ideas in this study. These are included in the dictionary interpretation of "terminology," which is defined as a special or technical expression used in an art, science, or business. The
terms related to industrial arts programs for adults and those used predominantly in this study are listed below:

1. **Industrial Arts.** This is one of the practical arts, a form of general or non-vocational education which provides learners with understandings of and experiences with materials, tools, processes, products, and the conditions and requirements incident generally to the manufacturing and mechanical industries. Results are achieved through design and construction of useful products in laboratories. Its purposes are to develop and orient occupational and recreational interests, and aptitudes, specific abilities as well as desirable personal-social traits growing out of industrial experiences in addition to an ability to choose and use industrial products wisely, all coupled with the aesthetic relationships involved.

2. **Scope of Industrial Arts.** This includes recreational and consumer activities, along with the technical, as a means for integration leading to industrial, leisure-time, and better living experiences to be realized by the adult concerned.

3. **Content in the Curriculum.** This is derived from the technology, it reflects and covers the principal divisions of the technology such as:

    a. Development and use of power (tidal, solar, atomic, electrical, muscular, hydraulic, combustion).

    b. Transportation (land, sea, and air).
c. Construction (housing, public works, industrial, national defense, and others).

d. Communication (graphic, electrical, and other media).

e. Manufacturing: basic industrial methods of changing raw materials into finished products such as foods, textiles, ceramics, metals, woods, plastics, and leathers.

4. Methods. These involve work experience as a means, fields study, research, student-teacher planning based on needs and choices, personnel management, physical organization, illustrative aids, conferences, creative expression as in do-it-yourself activities, home workshops, rehabilitation, and therapeutic techniques for the handicapped.

5. Adult Education. Any purposeful effort toward self improvement carried on by an individual without any direct legal compulsion and without such efforts becoming his major field of activity. Adult education embraces all informal and formal activities which promote learning and better living for persons of approximately twenty-one years of age or older. In its narrowest sense, it is institutionalized instruction for mature persons who usually are not full-time students.

6. Home Workshop. A personal shop in which numerous articles from the home are repaired or projects developed
on the basis of social utility and the related information they contain.

7. Industrial Arts Programs for Adults. A plan of procedures followed in the education of adults who may or may not be any longer enrolled in school. These include those required in the administration of the industrial arts curriculum, the scheme of organization employed, and both the course content and method of teaching involved.

8. Recreation. A worthwhile leisure-time experience providing inherent satisfactions to the individual who participates voluntarily.

9. Do-it-Yourself Activity. Involvement in craft-type hobbies and other recreational interests for pleasure and in some instances for extra income. These activities are the results of increased leisure time created by modern labor saving devices and everyday living requirements.

10. Rehabilitation. The techniques employed to restore an adult to a former state of personal and economic functioning.

11. Therapy. A treatment for the restoration of a person's self-confidence and ability to do useful work by increasing his tolerance of the strains of everyday life.

12. Group Therapy. Means for expressing a new attitude toward the study and improvement of human interrelations, to experience give-and-take relationships, to stimulate thinking, to participate, to think through
problems more effectively in face-to-face relationships, and to realize basic needs such as: (a) need for acceptance, (b) need for satisfaction, (c) need for creative activity, and (d) need for social re-education.

13. Existing Adult Programs. Those activities related to shop work that were offered by an agency for mature persons beyond school age and those programs which were in actual operation during the time this investigation was conducted.


15. Day Programs. This term is defined as industrial type classes taught in a public school shop.

16. Adult Classes. Instruction and aids to study for mature persons. These classes are voluntary, purposeful effort toward self-development, conducted by public and private agencies, extension centers, churches and clubs, for informational, cultural, remedial, vocational, recreational, professional, and other purposes.

17. Leisure Time. Fundamentally a matter of time to do as one wishes, but with purpose and meaning. This is done when one engages in some activity that is developmental for the individual and for society. Leisure is closely related to recreation.
A general statement of the problem, the scope and limitation of the study, the assumed importance of the study, the research techniques employed, and the terminology held fundamental to this study, have been presented in this chapter. Chapter II will cover a comprehensive review of related literature encompassing the history and nature of adult education, functions of adult education, psychology of adult learning, methods of teaching adults, present-day patterns of adult living, functions of industrial arts education, and industrial arts education for adults.
CHAPTER II

A REVIEW OF RELATED LITERATURE

Before evaluating industrial arts programs for adults, it seems pertinent to review the literature concerning the history of adult education, nature of adult education, functions of adult education, functions of industrial arts for adults, psychology of adult learning, methods of teaching adults, industrial arts for adults and adult patterns of living.

A search through the Education Index, the Review of Educational Research and the card catalogues in The Ohio State University Library and the Dayton, Ohio, Public Library disclosed a considerable variety of information concerning the education of adults in industrial arts and other areas of learning and self-improvement.

It was apparent at once that industrial arts offers many opportunities for adult education. Whether he is aware of the fact or not, every adult is influenced in some way by industry and its changes. He need not be a factory worker to feel the effects of industrial change. Even the most remote farmer uses industrial products and in turn, the industries buy raw materials from him. It is important,
therefore, that each person have some understanding of the economic factors which influence his life. Man then becomes the master of his environment and uses it for his purposes.

He may also meet limited vocational needs or engage in do-it-yourself occupations through special courses, evening school programs, group meetings, instructional materials, correspondence courses, or home demonstrations. Adult courses in rural communities have greatly improved living conditions. Industrial arts in rehabilitation centers enable adults to live more effectively and happily. Similar programs conducted in community centers, and in public and private institutions during the day and evening serve large numbers of adults in their quest for some form of personal improvement. Many of the studies and reports, are presented in this chapter under the following headings:

1. History of Adult Education
2. Nature of Adult Education
3. Functions of Adult Education
4. Functions of Industrial Arts for Adults
5. Psychology of Adult Learning
6. Methods of Teaching Adults
7. Industrial Arts for Adults
8. Adult Patterns of Living
An extensive investigation of the literature revealed that no historical analysis of adult education appeared to be as comprehensive as the coverage given by C. Hartley Grattan in his book (22, p. 135), *In Quest of Knowledge: A Historical Prospective on Adult Education* and Malcolm Knowles' analysis (76, p. 67) of adult education in the United States published in the *Adult Education Quarterly*. The 1960 *Handbook on Adult Education in the United States*, edited by Knowles, is the most current work treating the subject.

Lyman Bryson has defined (10, p. 3) adult education as "all activities with an educational purpose that are carried on by people engaged in the ordinary business of life." Other definitions have been given, yet none seems better than Bryson's. What has happened in the history of adult education will throw light on present-day problems in the field. It may be wise, then, to report accounts of the early beginning of the movement.

C. Hartley Grattan (22, p. 21) believes that adult education has deep roots. He says:

Although man has spent more time on this planet as an illiterate than as a literate, then accomplishments of preliterate man are often overlooked. If we are to gain any worthwhile historical perspective on adult education, a brief glance at them is necessary. We should at least revive our appreciation of the point that it was while men were innocent of letters that they established
their character as learners and discovered the advantages and at least some of the basic techniques of transmitting knowledge.

Informal adult education is as old as history itself. Biblical documents show numerous efforts in this direction. Formal adult learning, however, may be credited to England. Eva White (92, p. 509) explained that:

... in the fifties and sixties of the nineteenth century a group of Englishmen, among them Charles Kingsley and John Ruskin, saw that if England were to progress in such a way as to develop the maximum of human power, men must become masters of their fate, and so the Workingmen's College was founded in the midst of a working class community in East London. This was a pioneer in adult education.

In contrasting the development of adult education in America with that in other lands, Bryson (10, p. 13) says:

American adult education has not been of a single and systematic character. It has never been a folk movement for the refashioning of a national culture like that undertaken in Denmark under the leadership of Bishop Grundtvig. It has not been a movement for the intellectual improvement of the underprivileged, particularly the "working class," as in Great Britain. Nor has it ever been a definite concern of the government, used to propagate a political philosophy as in Italy and Russia and more recently in Germany. It has always been carried on by a wide variety of agencies, for a variety of purposes, and with many different kinds of people. For this reason, some critics have called it formless and without direction. Actually, it has penetrated to more phases of life in America than in any other country.

DeYoung (16, p. 299) reports that:

In America, informal education for adults was promoted through tribal practices among the Indians long before the arrival of the pilgrims in 1620, when town meetings were started among the white colonists.
In his discussion, Knowles reports (76, p. 68) that: adult education might be said to have begun in this country when the early settlers learned from the Indians how to grow corn, conquer the elements, and survive in the inhospitable New World.

The upsurge of interest in the natural science, the desire for a broader diffusion of knowledge from 1780 to 1891 expressed itself in many ways. Among the institutions that were founded were the Pennsylvania Academy of Fine Arts, Boston Mechanics Institute, Lowell Institute of Boston, the Smithsonian Institute of Washington, D.C., the first public library in Boston, the Mechanic's Institute in Cincinnati, Ohio, the Cooper Union in New York City, the land grant colleges established in 1862 under provisions of the Morrill Act of Congress, and the organization of the first women's clubs. These are a few important events of the beginning of this movement.

Numerous accounts in the literature reveal that the first and one of the most famous national adult education programs, the American Lyceum, was organized during this period. Among those who often appeared on the programs were such noted speakers, writers, and lecturers as Beecher, Emerson, Hale, Holmes, Lowell, Phillips, Thoreau, and Webster. Emerson frequently lectured for a small fee and oats for his horse. He wrote most of his essays for oral delivery from the lyceum platform. Founded in 1831 by Josiah Holbrook of Massachusetts, the Lyceum flourished
until 1835, there were some 3,000 town lyceums presenting lecture-discussions at weekly meetings for mutual improvement of their members and the benefit of society. Their principal project was the advancement of the public school movement. The Lyceum had largely accomplished its purpose by 1845 and rapidly disappeared from the scene.

Next came the Chautauqua, University extension and public Forum movements. Established in 1874 at Chautauqua, New York, as a summer school for Sunday school teachers, Chautauqua rapidly broadened its program to include literature, science, history, and other subjects of general culture. For many years the Chautauqua carried cultural stimulation into the by-ways of rural America.

This period also witnessed the founding of many welfare agencies such as Settlement Houses, Salvation Army, family welfare agencies, youth agencies such as Y.W.C.A., Y.M.C.A., Boy Scouts, and Girls Scouts.

Next came the Correspondence school, the largest and best known of which is the International Correspondence Schools, founded in Scranton, Pennsylvania in 1891.

Two significant facts of this early movement stand out. First, adult education developed as a part of some other, rather than a discrete activity. Second, individuals and agencies concerned with the education of adults developed intercommunication and loyalties around specialized interests
before there was any consciousness of a common or national aim.

The emerging pattern of growth of the adult education movement thus became a designless mosaic, rich in diversity but devoid of unity.

Many changes occurred after the turn of the century. In 1914 came the passage of the Smith-Lever Act which provided federal funds for the establishment and operation of a co-operative agriculture extension service on a contributive basis with state funds.

Through the years this program has grown to be one of the largest single enterprises in adult education. The federal government next moved into the field of adult education in response to the need for skilled workers in war industries. The Smith-Hughes Act, passed in 1917, made funds available for the expansion of vocational education in "agriculture and trade and industries," of less than college grade.

These funds were augmented in 1946 by the passage of the George-Barden Act.

The depression witnessed support of adult education by the Federal Government through such activities as the W.P.A., N.Y.A., C.C.C., and the T.V.A., to name a few.

The role of the Federal Government in adult education in America has been largely that of stimulating or pump priming. In contrast, the government in most European
countries, have financed or operated many adult education programs directly.

Frederick P. Keppel, newly elected president of the Carnegie Corporation in New York, held a series of conferences in 1924, to promote the founding of the American Association for Adult Education launched in 1926. This organization existed twenty-five years and served as a clearing house for information about adult education.

The Adult Education Association of the United States of America was founded in Columbus, Ohio, on May 14, 1951, as the result of the merger between the Department of Adult Education of the National Education Association and the American Association for Adult Education.

The spirit of cooperation expressed itself on the local level with the organization of several dozen local, state, and regional adult education councils or associations during this period. Private foundations have since given large scale support to adult education projects. The Fund for Adult Education of the Ford Foundation was established in 1951. The Carnegie Corporation supported adult education for twenty-five years. The Kellogg Foundation has contributed to several special activities. State aid has increased. Another force has been the extension and deepening of knowledge about adult education through experiment and research.
The publication in 1928 of Edward L. Thorndike's book Adult Learning stimulated a series of similar studies. Nowadays, one finds much less reliance on lectures than formerly. Much more use is made of group discussion, motion pictures, demonstrations, field trips, recordings, and other audio-visual aids. Learning tends to be keyed to problems, experiences, and needs of people in everyday living rather than to abstract subject matter. Until 1924 the term adult education was practically unknown in this country. Agencies engaged in educating adults were so unrelated they did not even have a common name for what they were doing. Today, adult education is becoming established as the fourth level of the educational system, a natural progression from elementary, secondary, and higher education levels. Such leaders as Lyman Bryson (10), C. Hartley Grattan (22) and Malcolm Knowles (34) have published statistics to indicate the scope and quantity of adult education from 1924 to 1960.

Certain generalizations, which may have implications for future programming, can be made in reviewing the historical development of adult education in the United States. Knowles' list (34, p. 26) below covers these generalizations:

1. The institutions of adult education have emerged in response to specific needs, rather than as part of a general design for the continuing education of adults.

2. The developmental process has tended to be more episodic than consistent.
3. Institutional forms for the education of adults have tended to survive to the extent that they become attached to agencies established for other purposes.

4. Adult educational programs have tended to gain stability and permanence as they become increasingly differentiated in administration, finance, curriculum, and methodology.

5. Adult educational programs have emerged with and continue to occupy a secondary status in the institutional hierarchy.

6. The institutional segments of the movement have tended to become crystallized without reference to any conception of a general adult education movement.

NATURE OF ADULT EDUCATION

In discussing the nature of adult education, Max Birnbaum (6, p. 379) states:

A basic purpose of adult education, as of education in general, is to help equip the individual with the knowledge, insights, and skills which will enable him to make the wisest decisions in his social, economic, and political life as well as to contribute to his personal enrichment. The ultimate educational decisions are a matter of individual choice not predetermined by an educative agency.

An enlightened and happy citizenry is the result of an effective system of education. Chris A. DeYoung (16, p. 274) in his Introduction to American Public Education says:

Adult education no longer needs justifying arguments. Its diversified program includes literacy instruction, Americanization, opportunity schools, extension services, correspondence schools, Chautauquas, public forums, town meetings, church groups and clubs, workers education libraries, federal programs, and other activities. Co-
ordination of adult education with other areas of education is necessary.

He lists a number of specific aims of adult education programs, highlighting their value in dispelling ignorance, and supplying opportunities for life enrichment, deeper insights, creative thinking, and social action in a democracy.

One of the better statements on the nature of adult education is by W. Ballentine Henley (25, p. 1) who states:

In the adult education classes of America are found the secret ingredients that have made this country great--people of all races, all creeds are made brothers by their common search for truth and self-government. In the ranks of the vast democratic peace time army can be found the housewife studying interior decoration, the young man learning a new trade, the retired businessman finding expression in a new hobby, a recent arrival from Greece or Mexico studying languages or the United States Constitution. The little red school house at night has become a thrilling, sparkling palace of light, opening the way for fuller living to those who wish to grow.

Perhaps the most comprehensive plan for the education of adults is the one operating in Michigan. The statement of purpose of planning for public school adult education is worthy of mention. The bulletin (80, p. 8) states:

It seems clear that it is not possible to learn during the first 18 or 20 years all that is necessary to live successfully throughout life. Adult education serves, on the one hand, to help the individual reach his highest possible usefulness and self-realization, and on the other hand, to help the adult community identify, study, understand, and meet problems as they arise. The purpose is not only for individuals and society to "catch up," but increasingly to "keep up" and advance.
The heterogeneous nature of the preceding accounts of adult education suggests need for further evidence. Two kinds of evidence can be offered. The first is from a study of Thurman White (93, p. 155) who conducted interviews with a random sample of leaders in four types of programs:

1. American Association of University of Women
2. The public schools
3. Proprietary schools
4. Personnel training

White summarized his findings (93) to show that adult education leaders have a high common interest in nine general topics. These are:

1. To gain a better understanding of the basic needs which cause adults to participate in educational programs.

2. To gain a clearer insight into the changing interests of adults in vocations, religion, family, leisure time activities, health, and other areas of life.

3. To increase one's ability to apply psychological principles to the selection of objectives.

4. To acquire techniques for relating the program more closely to the general needs of the community.

5. To acquire techniques for relating the program closely to the needs and interests of adults.

6. To become more skillful in recognizing community needs and resources important to adult education.
7. To develop a better understanding of the kinds of educational materials most suitable for mature people.

8. To develop a better understanding of the kinds of educational methods most suitable for mature people.

9. To become familiar with the procedures for "keeping up" with new developments and materials for adult education programs.

The implication that the findings strengthen the concept of a field of adult education is of importance to the science of education. The fact of common interest means that, if the barriers of special vocabularies and particular terms are surmounted, there is a common identity. General recognition of adult education as a field in the science of education is definitely formed. Adult education leaders have brought about agreement in many areas sufficient to produce a degree of cohesion, identification, and other factors significant to the nature of adult education activities.

The other kind of evidence is simply the fact that attempts to organize the field through local councils, state associations, and national organizations have persisted with increasing intensity and support. The Adult Education Association reports (65, p. 6):

Little reliable information is available about the full nature of the adult education field itself. No machinery exists for systematically collecting and disseminating information about the status and trends of adult education, activities, enrollments, adult interests, professional standards, legislation, finance, and other vital facts.
This was true as of 1951. By 1961, through the support of several foundations and the strengthening of membership in the Adult Education Association, the education of adults became widespread. Today, there is great popular support for the field as a whole. The nature of adult education has become focussed on the enlightenment and happiness of the entire populace.

FUNCTIONS OF ADULT EDUCATION

The United States Office of Education has recognized (27, p. 77) the value and need for adult education as attested by this statement:

Public education functions not only in the interests of young people, but also for the great body of persons whose full-time connection with the schools has ceased, but who are desirous of further training. The latter group has passed the age for compulsory school attendance, and are employed or eligible for employment. They are from 16 to 50 or more years of age. They have accepted the responsibilities for work, self-support, and family maintenance. Their outlook is that of adulthood. Because the fundamental justification for public education lies in the development of an enlightened citizenry, the responsibility of the public schools extends indefinitely into the adult field. Provisions for the continued development of every person, of whatever age, who desires and can profit from further education, is a concern of the public schools. There is no normal person who cannot improve himself in some knowledge, appreciation, ability, or attitude, and hence in citizenship qualities, if he or she wills to do so.

Adult education has recently become the responsibility of public school systems in many states. Yet information concerning adult education activities outside the realm of
vocational education is limited. Kempfer reported (30, p. 2) in his survey:

... Only a few states collect comprehensive data on general adult education activities sponsored by their schools. Until educational patterns become much more standardized than is true of great areas of the post-school field, exact data will be hard to obtain.

Homer Kempfer (30, ibid) states that Adult education was introduced many years ago and that records show adults have attended evening schools for over 150 years. Through the years, the reduction in working hours, longer vacations, earlier retirement age, and modern home appliances have been instrumental in increasing leisure time which a growing number of adults are using in the pursuit of educational activities. Cyril O. Houle (71, p. 404) explains that:

Increased leisure creates time for education. The marked increase in leisure time has made possible a greater freedom on the part of the average adult. In 1914 the averaged workweek in industry was 51.5 hours, but by 1935 it had dropped to 37.2 hours. The average industrial worker has gained fourteen hours a week.

Adult education has grown 500 percent in the past 25 years (97, Toledo Blade). Adults throughout the nation are enrolled in educational activities for literacy, Americanization, guidance, social work, and for vocational and recreational pursuits. All phases of adult education have an important responsibility in satisfying the demands from the adult population. Lyman Bryson (10, p. 6) says:

The very simple notion of getting an education and then going into the world to use it no longer suffices. Learning becomes a necessary element
in the life process, continuing as long as life itself continues. The conscious organization of adult education, that is, the provision of opportunities for continuing intellectual betterment, has become not merely desirable but necessary.

The above statement by Lyman Bryson makes clear the continuing function of adult education. Authorities in the field say that the idea of terminal points in education may well be eliminated because of rapidly changing world conditions. Therefore, the functions of adult education take on new meaning.

The generally accepted functions of adult education as stated by Maurice Smith (87, p. 37) are as follows:

1. To help make up defects in early education.

2. To help develop late maturing interests and capacities.

3. To help understand, adjust and re-adjust to an ever changing environment.

4. To develop mental attitudes and techniques of thinking and study.

5. To develop broader appreciations and tastes so as to refine and multiply sources of pleasure.

Beals and Brody in an intensive study (3, p. 24), of the literature of adult education discuss the lists of functions by two leading authorities in the field. They state:

Thus, Lyman Bryson has found adult education to have five functions: remedial, occupational, relational, liberal, and political. Floyd W. Reeves likewise has established five, but somewhat different, objectives: to fill the gaps left by other units of education, to maintain the skills and knowledge developed during childhood and youth, to keep the adult public in step with the latest developments in such fields as
government, economics, science and the arts, to
deal with problems that can be dealt with more
effectively at the adult level and to give to
the older and younger generation as basis for
understanding each other.

Bryson, of five functions (10, p. 29) bases his
selection on the motives of mature men and women who set
out to educate themselves and says further that:

If we are to attempt an analysis of functional
aims, it will be necessary to keep in mind the
rapidly changing character of the movement.
Fundamentally all five of the functions serve
the same purpose, the enlargement of the per-
sonality and the quickening of life.

He defines the five functions as follows:

1. **Remedial adult training** is formal study under-
taken to give a person of adult years whatever he
needs to bring his educational equipment up to the
minimum that is necessary for life in an American
Community.

2. **Occupational training** may be for advancement of
the job, advancement on another job of a different
sort, industrial rehabilitation of the victim of
machine unemployment, or for guidance in choosing
or adjusting to an occupation.

3. **Relational education** includes the study of
emotions, attitudes, and habits which are
designed to help adults better understand them-
selves and their relations with other persons.

4. **Liberal education** is activity of one's own
choosing, engaged in for the pleasure involved.

5. **Political education** includes all those studies,
practices, and experiences which men deliberately
undertake to make themselves better members of
the community.
In accordance with the views of other authorities, Hallenbeck (23, p. 30) sums up by saying:

The fundamental function of adult education is to keep the balance between people and circumstances in a changing world. One of the axions of civilization, democracy, and intelligence is that people can control their destinies. This becomes possible only when people can foresee and direct the changes which are the result of their material and social inventions.

FUNCTIONS OF INDUSTRIAL ARTS FOR ADULTS

In commenting on the functions of industrial arts, William E. Warner (90, p. 33) points out that as a school subject it has been developed primarily on the secondary school level, having passed through two incidental stages of growth, "manual training" and "manual arts," and entered upon the third which is "industrial arts." In this stage of development are embodied all the good features of the former stages as well as the basic elements of industry and general education. Its purpose is to fit the needs of everyone in an industrial civilization, regardless of age, race, sex, intelligence, or social status.

F. J. Moffitt saw the value of providing training for adults in the industrial arts courses. Moffitt, (81, p. 1), says:

The adult-education program, too, looks toward the industrial arts for assistance. Classes in adult education are springing up in every community. In their attempts to meet the responsibilities that have arisen due to the demand for more education for adults, educators have offered diversified
programs. But the enrollment for these programs shows a significant trend. People come back to the school not to renew their lost acquaintance-ship with Greek and Latin, but rather to enter the courses in mechanical drawing and woodwork. The patrons of the school must be provided for. Who can better lead them than the instructor in industrial arts? By training and temperament, he is well fitted for the work.

Such periods of expansion as that following the Civil War are not without some attending pitfalls, which may have a far reaching effect if not checked. The change from a predominance of agricultural employment to a condition where the trades and industries held a commanding position was not made without mistakes. Frederick G. Bonser (7, p. 23) comments on the problem as follows:

When the American people become fully conscious of the idea of reform, the idea expresses itself in practical application with astonishing and often wasteful rapidity. There is occasionally a suggestion that the present day conduct of industrial education may be an illustration of this tendency.

If Bonser's statement is true, something should be done to correct these mistakes. There is probably no other way to make such corrections than through education. There may be differences of opinion as to what agencies are best suited to direct the educational movement, but there should be no question as to the desirability of correcting costly mistakes. Every effort possible should be made immediately to direct the energy of the worker into more efficient methods.
Congdon (14, p. 44) says:

Progress in democracy is dependent upon the perception of the people. We cannot wait for a new generation to be trained, we must begin at once to build toward a more enlightened citizenship. Society need not only be a literate, but an intelligent citizenry that is willing to share responsibility for social progress.

Other needs for the continued training of adults are brought out by Warner (90, ibid.) in his comment on social and economic changes that are constantly taking place. He tells us that, although the population of the United States has increased 65 percent since 1900, manufactured articles have increased 151 percent. This means that the consumer is constantly faced with greater numbers of articles to consume wisely. Higher standards of living make intelligent consumption necessary. Moreover, methods of high pressure salesmanship make it imperative for the consumer to be well prepared to cope with the situation. Installment buying, attractive advertising, rapid changes in models and styles have made it necessary for the schools to lead in the matter of educating the public against the unscrupulous commercialism. This type of education is spoken of as "Consumer Literacy."

With an annual expenditure of seventeen billion dollars for food, eight billion dollars for clothing, six and one-half billion dollars for automobiles, and four billion dollars for home furnishings, the United States is
faced with the need of providing courses that will prepare
the consumer to choose more wisely than ever before.

The long lists of items offered to the consumer, the
many styles in clothing, varieties of furniture, glassware,
pottery, chinaware, paints of all kinds, and hundreds of
other articles, are confusing and bewildering to the average
person when he is making a purchase. Poor purchasing abil-
ity is an extremely wasteful handicap. Quoting from
Warner (90, ibid.):

... it would seem that any phase of the industrial
arts program would be evaluated in a school or com-
munity by considering its ability to touch on the
extent of American industry (orientational), to pro-
vide experience for a worthwhile leisure (recrea-
tional), to develop more intelligent consumption
(consumer knowledges), to provoke individual
growth (personal-social trait development), to
cultivate the aesthetic or artistic side of life,
and find out about the occupational realm, a side
of an economic society so important to everyone.
Surely it is not possible to conceive of a more
fundamental or useful phase of education than
this interpretation of industrial arts if modern-
day educational leadership is truly concerned with
developing a great citizenship in a great civili-
zation.

Industrial arts has not functioned only recently as
an important element in the world's work. On the other
hand, the industrial pursuits have left an indelible record
on the pages of history. When the past is reviewed, there
is one outstanding contribution that has been handed down
from generation to generation, accomplishments in handi-
crafts. Arthur B. Mays (39, p. 165) makes an interesting
comparison. Animals, he says, leave their teeth and bones
as evidence of their former existence. Man has left the work of his hands such as tools, records, and homes to make the stages of his intelligence. Railroads, steamships, T.V., concrete, radio, steel, automobiles, and a thousand things considered commonplace are all the products of education in the practical arts.

The opportunities for making contributions that the present will pass onto the future are increasing with the facilities provided by invention and the ingenuity of organization. The present schools for adults may accomplish two things in this direction. (1) They can increase the skill of the individual and provide sources of information, both of which will increase his joy of accomplishment. (2) They can fit him to serve industry better and thereby increase his earning power.

Kempfer (30, p. 21) stresses the importance of handicrafts to adults as a means of self-expression.

The benefits from creative self-expression through the arts and crafts can hardly be overestimated. Whether handicrafts are done for pay or fun, the pace is completely subject to individual control, and the workmanship in the product represents a healthy extension of personality.

Mary L. Ely (17, p. 126) writing in Adult Education in Action concerning industrial arts for adults says:

The activities in industrial arts for adults have a universal appeal for people of all ages and all occupational groups. Through shop classes, many persons have discovered abilities and interests never before realized. To the outsider, the classes in metal and woodworking are astonishing, especially so when he learns that the men and
women who are making works of art out of pewter, bronze, iron, and wood are people whose daily work is of a type that does not require manual dexterity. But what is even more remarkable than the objects produced is the sustained interest in the work. Some men are in their seventh year of this work. Many have equipped workshops in their basements. The same artistic workmanship and keen interest are found among the women who are engaged in weaving, leather tooling, and batik work or the many other handicrafts.

Mays clearly pointed out how industrial arts courses have contributed to the field of adult education for a long period, but beginning in the year 1946 there was even a greater demand for such activity.

Industrial arts has a responsibility for assisting adult education in meeting the recreational needs of adults. Warner (90, p. 5) supports this conclusion and charts the way in the following statement:

An explicit or new type of definition is needed that can be stated in the context of application or program. In short, a good definition needs to identify the principal functions of industrial arts and then to indicate how they should be applied at various levels, through what types of subject matter, with what variety of methods, in what kind of physical setting, and then perhaps gratuitously, in what perspective.

Warner goes on to delineate the function, scope, content, method, and type of equipment and facilities. He says:

Functionally, industrial arts as a school subject is concerned with providing experiences that will help persons of all ages and both sexes, profit by the technology, because all are involved as consumers, many as producers, and there are countless recreational opportunities for all.
This study is concerned with six functions reported (42, p. 10) by The Ohio State Department of Education. These are:

1. the Orientation function
2. the Technical function
3. the Recreational function
4. the Consumer function
5. the Social function
6. the Cultural function

Consideration of these functions draws attention to the close relationship which industrial arts has with such subjects as physical science, art, home-making, social science, language, economics, and agriculture.

PSYCHOLOGY OF ADULT LEARNING

Activity is well recognized as a very desirable concomitant to learning. When direction, related activity and psychological techniques are added to activity, it is quite evident that there is a desirable and favorable arrangement for learning and development.

Edward L. Thorndike (55, p. 1) focuses attention first on the ability of the adult to learn. Of the fallacy that adults cannot learn, he says:

The assumption was shown to be false by the experiences of everyday life resulting in measurable change in grasping and retaining information.
Further research by Thorndike (55, *ibid.* ) revealed:

The ability to learn increased from early childhood to about age twenty-five and decreased gradually and slowly thereafter, about one percent a year. Childhood was found to be emphatically not the best age for learning in the sense of the age when the greatest returns per unit of time spent are received. The age for learning that is best in that sense is the twenties, and any age below forty-five is better than ages ten and fourteen.

Later investigations by such authorities as Miles and Jones, make it probable that the decline in ability to learn from ages forty-five on to seventy is not much more rapid than this, so that a man sixty-five may expect to learn at best, half as much per hour as he could at twenty-five and more than he could at eight or ten.

Kidd said that in his studies (33, p. 9) few, if any, adults approach their potential achievement in learning. He says that the success of any learner, youth or adult, is bounded by his innate capacities.

It is the opinion of Clinton Hartley Grattan in *In Quest of Knowledge* (22, p. 14), that:

... many adults are reluctant to attempt really serious adventures in adult education by a nagging feeling that, after years out of school, they can no longer learn, or cannot readily learn. There is something of a tradition which supports this notion. It has been said that men learn little or nothing after some arbitrary age, say forty. Even flexible-minded psychologists of past times, like William James, have supported the idea. In recent years, however, this idea has begun to lose its force among informed people, with especial rapidity since Edward L. Thorndike published *Adult Learning* in 1928. Given correct teaching methods and a favorable environment, adults can learn, if not
quite as rapidly as adolescents, nevertheless just as thoroughly and in many instances with greater satisfaction. Adults who today still cling to the older notion are simply putting an unnecessary obstacle in their way. There is no doubt that many still do. It is up to adult educators to contrive ways of removing it.

Six principles which apply in helping adults learn are given by Cass and Crabtree (13, p. 24):

1. A learning experience must be goal directed.
2. A learning experience is shared, the learner is a partner in the process.
3. Facts to be learned should be functional and meaningful.
4. Presentation should be varied, clear, and implemented by many methods and devices.
5. The laws of learning should be constantly observed.
6. Individual differences must be considered in teaching.

These scholars also list five factors of fundamental significance which affect the learning of adults. They are (1) physiological changes, (2) learning ability, (3) interests, (4) memory, and (5) power speed.

Lorge presents (38, p. 49) some salient points in the discussion of the relativity of these five factors:

Whenever learning ability is measured in terms of power ability, that is, without stringent time limits, the evidence is clear that the learning ability does not change significantly from age 20 to 60 years. Bright people of 20 do not become dull by 60 nor do dull young people become moronic by 60. An individual at 60 can learn the same kinds of knowledge, skill, and appreciation that he could at 20. His performance may be reduced because of shifts in his motivations, speed,
self concepts, or sensory acuities. Age as age probably does little to affect his power to learn or to think. Aging brings different values, goals, and responsibilities. Such changes in values together with physiological changes may affect performance, but not power. Adults learn much less than they might, partly because of the self-underestimations of their power and wisdom, and partly because of their own anxieties that their learning behavior will bring unfavorable criticism. Failure to keep on learning may affect performance more than power itself.

A list of other factors that must be regarded as significant in working with adults while they learn was made by Cass and Crabtree (13, p. 26) as follows:

1. Attendance is voluntary and conditioned by a practical motive; the adult is free to walk out if he feels he is not getting what he wants.

2. Students bring a rich, mature experience to class which conditions the learning by making it easier at times, but imperative, that new facts be related to this background of experience.

3. Learning is conditioned by the general decline in learning capacity.

4. Since the adult usually has a ready made motive or purpose when he comes to school, learning is of greater consequence and more worthwhile.

5. The adult has handicaps which he must overcome, physiological changes, psychological handicaps of prejudice, set patterns and habits, fatigue resulting from a full days work prior to class.

6. The adult needs more time to learn.

7. The adult needs to see an immediate benefit to himself in what he learns.

8. The adult is always ready to learn if the material presented bears upon his needs or deals with the concrete, practical problems of community life.

9. The adult is not content to be a spectator; he needs to participate in the activities of the class frequently during a session.
10. The adult feels a sense of hurry; a shortness of time in which to learn; he is an impatient learner.

11. The adult must acquire and retain a high degree of self-confidence and must have a feeling of success to a far greater degree than children.

12. The wide variation in the experience, age, and education of adults accentuates the role played by individual differences in adult education.

13. Adult learning experiences are, in most cases, supplementary or complementary to some major occupation other than education.

Interests of adults have engendered many studies to determine to what extent adults change their interests with age. Investigations by Cass and Crabtree (13, p. 23) reveal that:

The interests of adults do not tend to change much but the value of depth of an interest varies. From the age of 20 until 65, there is only a slight decrease in the general amount of a person's interest and none at all in those interests which are needed for adult learning. An adult may not learn because he is lazy, tired, or because the subject does not appeal to him. Again, it may be due to the fact that he has had little or no opportunity to engage in learning situations since he was 20 or 25. Carelessness also may be a factor which hinders learning from taking place.

An analysis of learning is stated by Ordway Tead (53, p. 24) who stresses the point that:

The teacher should have the expectation of some valuable permanent difference in student learning responses in point of attitude and conduct, direct and indirect, present and future, conscious and unconscious, specific and general. These differences are the evidences that learning has truly occurred. There has to be the immediate or prospective use of what is learned in areas of thought, feeling, and act—not necessarily in a utilitarian or vocational sense, but as integrated
into the whole person as a new resource with which to confront the varied life situations that arise.

METHODS OF TEACHING ADULTS

The federal bulletin, *Industrial Arts, Its Interpretation in American Schools* (27, p. 34) gives the following suggestions concerning the methods of instruction for adults:

Instruction of adults in industrial arts is of necessity highly individualized. Rarely will two students have identical motives for school attendance, or the same background of knowledge or skill. The teacher is a counselor and guide, rather than a mere instructor. For manipulative activities, he uses chiefly the method of demonstration for individuals or for small groups; for information as to processes and craft theory, he points out appropriate reference material. He recognized that each student feels a specific need, although the needs of the group may be as varied as the individuals in the group; he sees to it that each person initiates and develops plans to satisfy his expressed need; he advises and assists each student in performing the operations required in carrying through the problem; appraisal of the results of the work. Time and quantity of output are not usually important factors, but originality and correctness in design, accuracy in craftsmanship, excellence of finish, and satisfaction of personal pride, are the desired elements of accomplishment.

The authorities were in agreement that adult classes should be conducted on an entirely different basis than regular school classes. Those who come usually have some purpose of their own in mind and it is part of the industrial arts program to help them accomplish this objective. In fact, unless this is done the group will disappear.
On the basis of observations of how adults function in a group, William A. Bakamas (2, p. 79) casts doubt on what might be determined the one best method to be used in teaching them. He says:

It is possible that two schools may offer courses with the same name. One, however, may stress skills whereas the other may place emphasis on appreciations. The methods used will be conditioned by the ends towards which each is striving.

Anyone attempting to list specific methods to be employed in teaching adults may record so many that it would be difficult to make a selection. Emanuel E. Ericson's teaching practices and procedures which appear most suitable for shop or laboratory instruction will be observed in this study (19, p. 45). They are (1) the demonstration or showing method, (2) the lecture or telling method, (3) printed instruction or book method, (4) discussion or conference method, and (5) discovery or problem-solving method.

These five methods were selected as representative of the lot because they are considered to contain more distinct characteristics for teaching industrial arts than others in the lists. While these five must serve, it is not desirable to confine a teaching situation to the use of any one. Basic elements of several of these approaches may be appropriately combined for best results, depending upon the age of the students and the type of subject matter taught.
Other approaches to the use of methods in classes for adults are those proposed by Prosser and Bass (48, p. 237):

An instructor teaches student workmen when he does these five things efficiently: (1) He ties up new stuff with old experience (building on the real foundation of what they already know or can do); (2) He applies the new stuff, to the real problems and situations of the learner's job or line (making useable subject matter useable); (3) He has the learners participate in the learning by thinking and doing (learning to think by thinking, to use by using, to do by doing); (4) He checks the learner's work by the ability of the learner to understand and to use what has been taught (testing progress and ability by performance); and (5) He helps the learner over the difficulties and weaknesses which the check has revealed and sets him at work again to run under his own power.

These authors state further that:

Taken as a whole, the methods that teachers use with student workmen are efficient in proportion as they accomplish these ends; (1) They use the previous experience of students as the basis of instruction; (2) They teach through the eye more than through the ear; (3) They secure participating experience from the student; (4) They call for understanding, thinking, and use instead of the memorizing and temporary recall of words; (5) They check progress in understanding, thinking, and using instead of the temporary ability to recall information; (6) They develop efficient habits of getting and using knowledge instead of memory; (7) They provide the repetitive experience necessary to develop habits of skill in doing or thinking to be required; (8) They meet the current learning difficulties of students; and (9) They save unnecessary effort in learning.
Malcolm Knowles (35), p. 30) has the following to say about the purpose of teaching:

The first requisite of good teaching is an understanding that the purpose of all teaching is to produce changes in human behavior. The changes sought are of five kinds:

1. Changes in things known, or **knowledge**
2. Changes in things done, or **skills**
3. Changes in things felt, or **attitudes**
4. Changes in things comprehended, or **understanding**

The teacher who consciously seeks to create situations in which these changes will take place is on his way toward achieving artistry in teaching. His attention will then be focused on producing changes in persons, not on covering a given amount of subject matter.

Knowles (35, p. 32) lists what he considers to be the principles of adult teaching:

1. The students should **understand** and subscribe to the purposes of the course.
2. The students should want to learn.
3. There should be a friendly and informal climate in the learning situation.
4. Physical conditions should be favorable.
5. The students should participate and should accept some responsibility for the learning process.
6. Learning should be related to and should make use of the student's experience.
7. The teacher should know his subject matter.
8. The teacher should be enthusiastic about his subject and about teaching it.
9. Students should be able to learn at their own pace.

10. The student should be aware of his own progress and should have a sense of accomplishment.

11. The methods of instruction should be varied.

12. The teacher should have a sense of growth.

13. The teacher should have a flexible plan for the course.

INDUSTRIAL ARTS FOR ADULTS

The strength of America lies in her resources, both natural and human, and in her ability to organize and maintain the tremendous production that has made her a leader among the nations of the world. It is important, then, that people understand the great part industry has had in building the standard of living that Americans take so much for granted.

The adult school provides educational opportunities through various types of adult education courses for those persons who desire training supplementary to their employment, recreational pursuits, or other activities which are part of their daily living. It also provides, through as wide an industrial arts program as is feasible, opportunities for those who feel the need for broadening their interests, increasing their knowledge of industry, economics, and adjusting their personality and talents to the occupational world.
Many types of the world's work are included in industrial arts. Some of the more important ones are foods, textiles, woods, ceramics, metals, power, graphic arts, communication, transportation, and handicrafts. Counseling, safety, related science, planning and other phases of the program are very important parts of each of these areas and should receive careful attention. Some of these could be combined or further subdivided to suit the particular situations. There is much overlapping, which is to be expected, but his list gives some idea of the possible scope of industrial arts education for adults.

It is not intended that each program include each of these areas, but as many as possible and select such a group as would best give the adults of the community an orientation to industrial life possibilities under the conditions prevailing. Neither is the program designed to develop skilled workers in each of these areas. It is intended rather that through contact with one of these areas, the adult may gain an insight into the industry concerned and develop some skill in one or more areas.

Any organization or group must have a purpose for existing and some goal or goals toward which it directs its efforts. Otherwise, all activity is aimless and lacks the co-ordination of a central purpose, and that such a group be selected as would best meet these requirements.
Many sets of objectives have been listed for industrial arts. Some of the more recent are being advanced for industrial arts education for adults. A Prospectus for Industrial Arts in Ohio (43, p. 17) has the following to say concerning the professional objectives of industrial arts:

Considerable attention is being given to distribution and to the consumer, who more than ever needs to be "an intelligent chooser and user of the products of industry." There is also more reason than before to expect Industrial Arts to assist in the development of enduring interests of a recreational nature. Greater recognition is now given to design and the appreciation of great creations. Orientation also takes on new significance because of the myriads of new materials, resulting processes, and consequent jobs to be studied and experienced. There are so many more tools now which everyone should be able to use with facility. Think, also, of the multitude of technical things about industry which everyone should know. Then, the business of being a success involves the assimilation of desirable personal-social traits, many of which are easy to acquire in the setting of a school laboratory when such is the intent. All of these and other possibilities direct attention to the need and opportunity for developing Industrial Arts.

Concerning the values of industrial arts and its purposes, the bulletin Industrial Arts, Its Interpretation in American Schools (27, p. 1) contains the following:

Industrial arts, therefore, has general values that apply to all levels, and in a continuous program these values are progressively intensive and are cumulative in their effect as the pupil advances in maturity. Through such a program the pupil:

1. Gains knowledge of the changes made in materials to meet the needs of society, of tools and industrial processes used to effect these changes, of the constant adaptation of materials, tools,
and processes to meet changing needs and conditions, and of industrial workers and working conditions.

2. Grows in appreciation of the value of information regarding occupations as a background for a wise choice of a career, or the importance in modern life of tools and industrial processes, of the artistry of the designer and the skill of the artisan, and of the dignity of productive labor.

3. Increases in ability to plan constructive projects, to select and use sources of industrial and related information, to handle tools and materials, to express with material things his individual interests, to use effectively his recreational time, to work as a member of the group, and to evaluate work and its products.

4. Develops attitudes of concern for safety practices, of consideration for workers in all fields, or regard for cooperation among the members of a group, and of respect for property.

The objectives of industrial arts as listed by

A Prospectus for Industrial Arts in Ohio (43, p. 51) are:

1. Recreational interests.
2. Orientational experiences.
3. Consumer knowledges and appreciations.
4. Personal-social traits.
5. Common technical knowledges and abilities.
6. Guidance and counseling.
7. Manipulative functions.
8. Vocational connections.
The values of adult industrial-arts programs as stated in The Guide for Industrial Arts in California (50, p. 12) are as follows:

Adult programs in industrial arts provide instruction in skills that will assist them in developing worthwhile recreational interests, in organizing home workshops, in making useful household articles, and in discovering personal interests and aptitudes. These industrial arts courses are often similar to those offered on the high school level.

For the physically handicapped, industrial arts experiences provide practical and effective motivation as well as mental and manual therapy essential to the rehabilitation of an individual. Industrial arts activities have many recreational values which are fundamental to programs in the armed forces, hobby shops, in out-of-school activities, in youth work, and for adults before and after retirement.

Struck provides (51, p. 502) a comprehensive list of industrial arts activities that attract adults. This includes the home workshop, home mechanics, furniture finishing and refinishing, furniture and toy making, metal craft, airplane and boat model making, birdhouse construction, driver education, making electric toys, and learning to make and use bows and arrows.

He goes on to say that industrial arts on the adult level, aims to open up new avenues of creative endeavor largely followed in the spirit of occupational interests and hobbies. That there is increasing need for this is commonplace. The shortened hours of employment, the specialization, routinization, and repetition in occupations and the
high pressure of modern life calls for a return to creative work done in the spirit of the artist--craftsman.

Struck has found (51, p. 491) for the white collar worker, that the home work bench, the community club workroom or the school shop bench serves as a means of enriching and vitalizing life. The weak and the strong, the handicapped and the sound, the poor and the wealthy, the ignorant and the educated, each and all find pleasure, assistance, and satisfaction through industrial arts education.

ADULT PATTERNS OF LIVING

One of the greatest needs today is the opportunity to create, to use one's capacities, to express one's self, and to seek and enjoy the good life. Leisure time is constantly associated with money and machines, televisions and other modern appliances, movies and cars. Millions of people spend their after-work hours in passive and sedentary pursuits; this does not mean that these do not have their time and place. They do, in moderation, but not to the exclusion of all others.

Tibbitts and Donahue (57, p. 9) recalls when:

The cultural life of adults--who may or may not have had a maximum of four years at school was what they made it through weekly newspapers and farm magazines. Recreation was created at home, even if in association with neighbors. As the seniors got older, they continued to work, but slowly shifted to lighter tasks. The traditional final place for the very old was the chimney corner. One can get pleasurable
nostalgic about all this, but as a way of life it has vanished forever for most Americans. It has vanished as the country has industrialized and urbanized. Factories and cities have killed it. Today the need of the family, and often his wife also, works outside the home. Food and clothing are now purchased ready for use. Most educational and religious activities are carried on wholly in outside community institutions. Even recreation has, in large measure, to be sought outside the home. Only occasionally is sickness taken care of within the home, the more usual practice is to send the sick to hospitals. Houses have shrunk in size; and they are streamlined. The work in them is done as far as possible by machines: washers, vacuum cleaners, toasters, mixers, etc.

Other investigators conclude that present-day patterns of adult living are too routine. An individual, without an opportunity, to engage in diverse activities after his work day, to put leisure to good use and to benefit from its fruit, is almost invariable an unhappy person. This individual becomes "onesided," or interested almost entirely in a single path of life, to the exclusion or suppression of other elements. Engaging in a wide variety of activities broadens the individual, expands his interest, matures his attitudes, and strengthens his ability to meet different problems.

Since this investigation is concerned with the implications of industrial arts programs that aid adults in enjoying better and more effective lives, education for the teaching of a skill or trade is not enough. Emphasis must
be placed upon the release of one's creative and productive powers in order that well-rounded mental health may be enjoyed.

Many studies reveal that the educational objectives of adults applying to men or women vary according to individual needs or desires. An individual may be stimulated by several different objectives, which are possible to realize by enrolling in a course of his choice or by attending a meeting in the community. Industrial arts objectives tend to merge with those of the individual and the activity through which adults find they can enlarge their conception of the industrial world, and for making better adjustment to the demands of an industrial environment.

According to Brightbill (69, p. 84), present-day patterns of adult living are not static. He says:

... that the inherent desires of people for personality enlargement, physical growth, and cultural advancement, must be satisfied. In their broadest sense, these are the goals which promote interest in varied pursuits.

It is estimated that by 1980, two-fifths of the population will have passed the age of 45, and one-seventh will be over 65. Associated with this problem of greatly increased numbers in the older brackets, people are retiring at a much younger age. The average retirement age has been 65. Some companies are retiring their employees at 60 and some organizations are advocating 50 and 55 years as possible retirement ages.
Romney (85, p. 31) states that with the pressure from youth for the positions held by the older group, plans for much earlier forced retirement will evolve. This means added leisure time which, he feels, presents an added problem in the field of social adjustment.

A report from the Wilkie Foundation gives 1910 as the year in which an agrarian culture in the United States gave way to the industrial; for the first time in its history, more people earned their living in industry than in agriculture. Since then America's culture has become increasingly technological, including its agriculture. Material culture encompassing present-day patterns of living is shaped by technological invention, discovery, creativeness, production, and consumption.

Maurice H. Reid (49) in How to Use Hand Tools reminds us that:

One of the things that distinguishes man from other animals is his ability to invent and use tools, thus adding immeasurable to his efficiency and accounting for much of human progress. Using tools, however, is certainly not instinctive; some people use them better than others, and many may go through life using the simplest of tools the wrong way, thus adding to the difficulty of whatever task they may be trying to carry out.

Man's material culture, a backdrop of his everyday life, is a record of his quest for a higher level of living, a finding of ways to eliminate drudgery, to secure the freedom from material want, and to provide opportunity for
growth, intellectual, social, and spiritual. America's achievement of the world's highest standard of living can be considered to result from its scientific and industrial progress.

Industrial arts and engineering specialists conclude that man, especially in America, has not yet developed the necessary competencies for using wisely the products of industrialization. They believe that the concept of materialism has fired many a philosopher to question the ceaseless drive to even greater industrialization.

Earnest Nagel (54, p. 7) expresses a point of view which is becoming increasingly easy to document:

There is next the fear that an automatic technology will impoverish the quality of human life, robbing it of opportunities for individual creation, for pride of workmanship and for sensitive discrimination. This fear is often associated with a condemnation of "materialism" and with a demand for a return to the "spiritual" values of earlier civilization. All available evidence shows, however, that great cultural achievements are attained only by societies in which at least part of the population possesses worldly substance. There is a good basis for the belief that automatic control, by increasing the material well-being of a greater fraction of mankind, will release fresh energies for the cultivation and flowering of human excellence. . . .

And then Nagel (54, p. 8) suggests a vision of the future.

There has been no diminution in opportunities for creative, scientific activity, for there are more things still to be discovered than are dreamt of in many a discouraged philosophy. And there is no ground for supposing that the course of events will be essentially different in other areas of human activity. Why should the wide adoption of automatic control and its associated qualitative
methods induce a general insensitivity to qualitative distinctions? It is precisely measurement that makes evident the distinctions between qualities, and it is by measurement that man has frequently refined his discriminations and gained for them a wider acceptance.

Roger Burlingame (11, p. 19) credits industrialization with the development of this nation. He points out that without machines, inventions, and industrial products, the settlement of this country would have taken many hundreds of years and that present-day patterns of living would be far from what is now enjoyed.

America's standard of living is tied to its industrial growth and development. This is not to say that progress in materials produces an equal progress in the quality of living because there is a cultural lag. The literature reveals that man's progress with materials and machines has outstripped his ingenuity for good living. This condition has prompted reformers to plead for a slowing of the technological progress until man catches up.

The great question is, how can man manage to assimilate the continual changes in living effected by the technology so that his culture may reach increasingly high levels at a more rapid rate? He is not yet wise enough to know how, but he is in the process of discovering the answer. It may not lie alone in man himself or in his purpose of being; it may lie in the machine.
Arnold Tustin (54, p. 23) makes a penetrating observation:

Man is far from understanding himself, but it may turn out that his understanding of automatic control is a further step toward the end.

It is assumed for purposes of this study, that the better man understands the material world, the better he will likely understand what is to come. This is an assumption underlying the concept of the educative process inherent in the process of transmitting the culture. Man knows that it is better for him to have the technology than not to have it, but to so use it that he can draw ever closer to the goodness that he is capable of, remains the challenge.

This chapter has reported pertinent excerpts from the literature pertaining to the main exposition of this study. The next chapter presents the functions of industrial arts as they lend themselves to adult education.
CHAPTER III

FUNCTIONS OF INDUSTRIAL ARTS

Even though the learning experiences emphasize the industrial processes, industrial arts is a part of general education and has a responsibility for developing and understanding of the impact of industry upon society. It has areas of interest with other subjects, for example, both science and industrial arts provide experiences related to principles of electricity, electronics, and mechanics; both physical education and industrial arts promote wholesome recreational activity for the young and the adult alike, both fine arts and industrial arts use certain common media. Both history and industrial arts were modified by the industrial revolution.

Industrial arts experiences promote the broad objectives of general education. Encompassing five broad divisions of the economy, industrial arts education relates to communication, construction, manufacture, transportation, and power. The interdependence of these five divisions reflects the general shop approach in defining the six major functions of industrial arts education. These functions have been accepted as the: orientation function; the
Technical Function; the Avocational Function; the Consumer Function; the Social Function; and the Cultural Function. They have been stated in various ways by such leaders in the field as William E. Warner (59, p. 44), Gordon O. Wilber (62, p. 43), and Emanuel E. Ericson (19, p. 250). An analysis of their writings indicates that the functions suggested are complementary to the general classification contained in the Ohio High School Standards (42, p. 10). These six major functions, also called "objectives and Guiding Principles," should be used as a guide both for developing and for evaluating industrial arts programs. The content is described in the following statements:

The Orientation Function. Experience in industrial arts should help the junior and senior high school pupil become better oriented in an industrial society by exploring many types of tools, materials, processes, products, and occupations. Manipulation should be primarily a means for promoting other ends. Habits and skills derive their value from appropriate use. The emphasis is rather upon attaining a pattern of knowledge, attitudes, habits, skills and understandings, essential to individual and group welfare in a technological society. One of the basic outcomes of the orientation function is its value in assisting the pupil in making an occupational choice which may lead him into vocational preparation in the final years of his educational program.

The Technical Function. Industrial arts should provide as many opportunities as possible for pupils to spend at least a year in any phase of specialized interests that can be pursued with profit. The opportunity, for example, should be provided for a pupil to delve into the intricacies of cabinet or furniture making, electrical communication and power, lighting, automotives, printing a monograph, making a cabin or a boat including drawing the design and writing the specifications, designing
and making a small machine, studying the occupa-
tional possibilities of certain local industries,
or any similar problem or group of related prob-
lems in one or more areas of the industrial arts
program.

The Avocational Function. Industrial arts also pro-
vides opportunities to cultivate a wide variety of
useful, wholesome, and enduring leisure time inter-
est and activities. Collection and appreciation
is involved in addition to manipulation. The impor-
tance of this function is increasing. There is now
almost as much time for leisure as for labor and
sleep together. Increased leisure time affords not
only an educational opportunity but it also becomes
a liability and a responsibility with which the
school must cope.

The Consumer Function. A primary purpose of indus-
trial arts is to aid the individual in developing
intelligent attitudes and understandings concerning
the selection and use of the products of industry.
This involves studies and experiences from the pro-
duction of raw materials, through the processes and
problems involved in their manufacture, to the dis-
tribution of finished products; and their wise use
by the ultimate consumer. It should and must help
him achieve consumer literacy since he needs to
live intelligently in the midst of an involved
technology.

The Social Function. Experiences in industrial arts
through activities in the shop or laboratory, as
well as outside, should help the students develop
desirable social habits and attitudes. The program
is concerned, for example, with helping pupils
understand and formulate wholesome opinions towards
such things as integrity of workmanship, sanitation,
housing, wages and hours of labor, safety, preserva-
tion of natural resources, or any other related
social problem.

The Cultural Function. Experiences in industrial
arts should help the individual enjoy a finer cul-
ture as regards materials in involved technological
society. This means helping him develop and use his
material inheritance. For example, the pupil can
learn to know style or design in architecture, furni-
ture, rugs, pottery, silverware, glass, dress, china,
printing, machinery, and other items of common use,
and appreciate the forces that have influenced them.
With a cultured taste, he is prepared to surround himself with those things from which he can derive life-long satisfaction.

Any consideration of functions like these draws attention to the close relationship which industrial arts has with other subjects.

Four functions are essentially those accepted for this study. They are: the Technical, the Consumer, the Occupational, and the Recreational.

The orientation, social, and cultural functions are not included because they are inherent parts of each of the functions and can best be provided for in that relationship. The occupational function is included in the selected list because it is important enough to stand by itself since the study is concerned with the education of adults.

In any investigation of the functions of industrial arts programs developed for adults, consideration must be given to certain elements on which the philosophy, course design, interests of the adults in the program, methods of course presentation, and procedures common to which overall activities are based. With these areas in mind, the four functions of industrial arts are analyzed in this chapter. These analyses serve three purposes. First, they serve to identify the nature of industrial arts more completely, thus facilitating the definition of its scope and establishing its limits. Second, they show the interrelationship and need for equal balance of all phases of any
industrial arts course planned for adults. Third, they serve as guides in curriculum design and in the selection of subject matter. The functions as delineated below draw on the statements of functions in The Ohio State Department of Education Standards, but are presented with attention given to the theme of this study: what is important to adults in the basic business of living.

Since this study attempts to develop organizational procedures and practices with special references to exemplary industrial arts programs, it seems that as the first step in the process of identifying the functions of industrial arts, is to describe certain curriculum features of industrial arts programs. Thus any organization planning an industrial arts program for adults at this time must recognize two distinct types of programs which are now being conducted at the secondary and college levels. The two most common types are the trade concept which is usually associated with the "unit shop," and the "general shop" of the curriculum to reflect technology (40) which is usually associated with the "laboratory of industries." Discussion of these concepts follows:

1. Trade Concept. In this approach a trade or several trades are analyzed and industrial arts presented according to the skills and related information pertaining to the trade. The teacher and the student perform analyses of a project, the steps of which are then arranged in an
order of increasing difficulty. In this approach "what the student should know" is usually presented through lectures, demonstrations, and workbooks. The "what the student should be able to do," manipulative activities, usually receive major attention. Many such programs are highly inflexible and teacher dominated; others are very progressive and based on the needs and interests of the individual, yet limited in scope by the nature of the trade. Industrial Arts Curricula based on the trade concept usually consists of:

- **Metals** - machine shop, forging and welding, sheetmetal and art metal, and foundry.
- **Woodwork** - cabinetmaking, woodturning, carpentry, and pattern-making.
- **Graphic Arts** - hand composition, printing, photography, silk-screen operation, linotype operation, and bookbinding.
- **Electricity** - house wiring, motor and generator winding, radio wiring, and work with household appliances.
- **Drafting** - architectural drawing, machine drawing, planning and layout work.
- **Automechanics** - body and fender repair, fuel and electrical systems.

This type of program is usually characterized by pre-planned projects presented by the teacher. Frequently, job sheets,
information sheets and other forms of instruction sheets are used. In many instances the emphasis is on the trade skills and knowledge necessary for the trade rather than upon the development of the additional teaching techniques and skills which will enable the student to become an adequately prepared individual.

2. Curriculum to Reflect Technology. This approach puts emphasis on helping all individuals to gain an understanding of technology, to understand the processes and techniques of industry and how to apply them to problems of daily living, and to develop an appreciation for skills and their application for the benefit of the individual and society. Orientation is the heart of this approach, and any student activity which may result in a greater understanding of technology is appropriate. Tool processes and techniques, instead of becoming ends, become means through which all persons may gain an understanding of technology, may understand the processes and techniques of industry and how to apply them to problems of daily living, and develop an appreciation for skills and how they can be applied for the benefit of the individual and society.

This approach makes use of, and considers, the following factors: individual differences, research, student planning, creative expression, resource units and files, field trips, audio-visual aids, personnel organization, knowledge of industry supplied by individuals who are
specialists in industry and other resources—individual, school and community. It might be pointed out that some of the "trade" concept programs also use many of these methods and resource.

The curriculum to reflect technology is described in The New Industrial Arts Curriculum (40), presented at Columbus, Ohio, in April, 1947. The major divisions are: Power, Manufacture, Construction, Communication, Transportation with both manual and industrial emphasis, and Personnel Organization. These divisions are as follows:

1. Power, Sources, Generation, transmission, and utilization. Sources include the natural muscular, hydro, atomic; generation embraces electrical, solar, combustion, and nuclear fission; transmission covers electrical, hydraulic, pneumatic, and mechanical; and utilization reviews use in manufacturing, construction, communications, and transportation.

2. Manufacturing. This division considers the history, materials, fabrication, and consumption of industrial products. The latest census breakdown of industries was examined and the division was broken down into the following nine main areas: food manufacture, textile fashioning, ceramic creations, metal production, rubber products, chemical composition, cellulose fiber fabrication, leather items, and miscellaneous developments.
3. Construction. The following areas are considered in this division: Homes include dwellings and utility units; Highways embrace roads, bridges, and tunnels; Airports cover private, commercial, and military; Factory and Public Buildings pertain to large type structures in comparison to homes; Waterways include dams, canals, and levees.

4. Communications. This division is not fully realized until thoughts, words, and pictures have been composed, duplicated, received, and properly interpreted. Many of the occupations and industries which are considered individually in "trade concept" programs, are grouped under some of the major areas of this division. For example the Mechanical Electrical area includes telegraph, radio, teletype, facsimile, television, multi-channel methods, and radar. Student activities are concerned with manipulation, investigation, and planning, in the composition and duplication, transmission and reception, and interpretation of modern methods of communication.

5. Transportation. This division is concerned with the areas of sea, land, and air transportation. Consideration is given to the history, development and uses of various type carriers including: airplanes, dirigibles, automobiles, steamships, sailboats, and other types of carriers. The development of highways, waterways, airports, and the socio-economic aspects of their development are also briefly traced.
6. Personnel Organization. A personnel organization requires that the time and effort of every individual be planned and organized just as in any complex enterprise. The personnel organization consists of a personnel organization chart, an organization manual or job specification index, and an activity record card. The organization should be highly flexible and should provide for and encourage all individuals to share in its planning and operation so that the lessons of broad personal and social relations might extend from the laboratory of industries into the daily activities of students in the home, the school, and the community.

One of the very important features of the "curriculum to reflect technology" is the interpretation of the interplay within and between divisions. It is important that there is interplay between the various divisions of technology, for industrial arts education is concerned with the whole of technology, not one isolated phase. The divisions as presented are not intended to be considered as limiting in scope; the curriculum should be highly flexible in order to meet the needs and interests of individuals, and to meet the demands resulting from changes in technology. This broad approach to industrial arts education is in keeping with modern educational thinking, and is supported in the writings of Wilber (62), Olson (44), Dewhurst and Associates (15),
Bonser and Mossman (8), and the United States Commissioner of Education (27).

Each industrial arts program, whether using the trade, technological, or some other approach, should be able to show that the courses offered are adequate to achieve the stated purposes of the program, including the orientation, technical, avocational, consumer, social, and cultural emphasis. A means of concentration should be provided, and the program should provide evidence of an adequate staff and other instructional resources.

With the basis of the curriculum thus clarified the selected functions of industrial arts pertaining to this study will now be analyzed and presented in outline form. The following concept of the functions of industrial arts is in keeping with current educational thought. Attention is focused on individual planning, executing, evaluating, and problem-solving. The mission of industrial arts is not to furnish industry with craftsmen or technicians; it is rather to enlighten boys and girls and men and women as to the role of industry in, and the influences of the technology on, their living and to enable them to live to capacity in an industrial civilization.
THE TECHNICAL FUNCTION

When educators delve into various problems of adult education, it is often necessary to insist upon the distinction between urgency and importance in dealing with men and women who may think that urgent matters are all that make a real difference. Every adult interested in or engaging in industrial arts programs has a range of taste and interests, not just a fixed response at a fixed point. It seems sensible to help each man move upward to the top of his range.

The objective of technical skill has been most influential in determining the nature of the curriculum. Likewise, it has been most effective in shaping the physical shop or laboratory in which the curriculum is carried on.

"Doing for" has no more place in an industrial arts program for adults than planning for those whose lives are affected. They must plan and do for themselves. In such a situation, the job of the adult educator, becomes one of giving the persons involved mastery of technical skills and helping them to use those skills effectively. Wilbur's (63, p. 42) list of objectives substantiate this premise:

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

2. To develop a certain amount of skill in a number of basic industrial processes.
Adherence to a practice of discovering that adults want to learn and how they want to learn is vitally important in the technical function in industrial arts adult programs. Emphasis is placed upon each adult developing basic skills with tools and equipment, developing interests, and talents, and discovering his limitations through instructional shopwork in a variety of materials and processes which relate to technical occupations. The American Vocational Association's *A Guide to Improving Instruction in the Industrial Arts* (1, p. 29) outlines a number of shop skills and knowledge pertinent to the realization of the technical function. The Association also lists six student behavior changes which characterize the objective:

1. He will be familiar with the common hand tools and be able to perform the common operations associated with them up to a standard compatible with his maturity.

2. He will be familiar with the common industrial machines.

3. He will be able to use the common machines safely and effectively.

4. He will be able to perform the operations involved in doing simple jobs or in making simple projects.

5. He will be able to solve the problems that are involved in common types of construction and repair.

6. He will realize his limitations in handling and using common tools and machines.
The skills or goals describing the technical function given above can well serve as the starting point in any industrial arts program for adults.

This interpretation of the technical mission of industrial arts concurs with Olson's analysis (44, p. 80) and attempts to reflect the concept and spirit of industrial arts for adults as given in his definition in Chapter I of Technology and Industrial Arts and in the sections which follow:

I. THE TECHNICAL FUNCTION "The Science of the Industrial Arts"

A. Technical Elements (Knowledge, Skills, Understanding, Appreciation).

1. How industry employs technical processes and scientific principles to convert materials into products.

2. How industry provides housing for industry, business, government, schools, homes, etc.

3. How industry provides transportation for materials, products, and persons.

4. How industry provides, transmits, and utilizes power and energy.

5. How industry provides media for, and systems of, communication.
6. How industry employs research in the development of materials, processes, products, and industries.

7. How industry makes use of organization, management, personnel records, controls, in the production of goods and services.

8. How industrial products are used, operated, maintained, repaired, in industry, business, home, school, etc.

9. How the student can convert representative materials into products, by means of representative processes.

II. INDUSTRIAL COMPONENTS

A. Basic Materials

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<th>types</th>
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<td>use</td>
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<tr>
<td>sources</td>
<td>processes</td>
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</tbody>
</table>

B. Basic Processes

| hand | chemical | electrical |
|      | mechanical | natural    |
|      | thermal   |             |

C. Basic Products

| invention | distribution | use |
|           | structures   |     |
| design    | construction | services |
| manufacture |           |     |

D. Basic Services

| power | communication | household |
|       | recreation    | security  |
|       | transportation |               |

E. Basic Industries

| manufacturing | transportation | research |
| construction  | electronics    | services |
| power        |               |         |
### III. REPRESENTATIVE CURRICULAR COMPONENTS

**A. Industrial Design**
- engineering psychology
- styling re-design models evaluation

**B. Planning**
- estimating analyzing problem-solving scheduling drawing evaluating

**C. Inventing**
- Imagining creating discovering legislation experimenting developing

**D. Presentations of Ideas**
- drawings photographs models mock-ups cut-aways charts

**E. Materials**
- types kinds sources qualities standards manufacture uses
- standards

**F. Standards**
- interchangeability modular units measures symbols limits tolerance

**G. Processes**
- hand mechanical chemical thermal electrical nuclear

**H. Structures**
- joints frames fastening utilized strengths loads

**I. Construction**
- fitting fastening assembly inspection testing

**J. Mechanisms**
- generation transmission motion controls machines mechanics
The consumer function appeared as the manual training and manual arts concepts were superseded by that of industrial arts. This appearance was a logical consequence of the realization that industry was increasingly providing the material needs for living. No statement or inference of a consumer function was found in Richard's proposed change in terminology (83, p. 32). It is probably accurate to say
that Bonser first sensed the logic of such an objective in an educational program derived from a study of industries. He expressed a concern for consumer education in industrial arts in his statement on outcomes of the study of Industrial Arts (8, p. 14) when he said that:

... one who has properly studied the industries should ... be able to buy and use industrial products of good quality in material and construction and well adapted to their purposes, at costs that are reasonable; to care for what is secured so that it will remain serviceable in its fullest possible measure; to repair or supervise repairing, when it can be done to advantage; and intelligently to substitute inexpensive for expensive products when this is needed. This is the economic outcome.

In its definition of industrial arts the Ohio Prospectus (43, p. 93) gives one purpose as "... ability to choose and use the industrial products wisely. ..." In the chapter on "Objectives and Their Meanings," the Prospectus (43, p. 54) includes the following section entitled Consumer Knowledges and Appreciations

Five principal meanings are also identified as belonging to this objective. These include: selecting, testing, operating, maintaining, and judgment. The objective applies from the time one even considers a product of industry until it is fully consumed. Considerable significance is seen for the development of this objective in Industrial Arts classes because of its widespread application to the many products of industry and to the increasing emphasis now being placed on intelligent consumption.

Woods, metals, appliances, plans, foods, tools, machines, garments, one's home, communication, transportation, all things which one consumes and are therefore significant phases of content material, or subject-matter, which will contribute to the achievement of the consumer knowledges and appreciations purposes.
The outline analysis immediately following represents the content of the consumer function. It has become of increasingly vital concern in daily living where a simple economic tenet holds that spending what one earns is as important as the earning itself. As products used in day-to-day living are changed and improved, they frequently become technically more complex, even in operation. Appliances for the home are good examples. Unless the consumer is able to keep reasonably informed of such developments, and therefore able to choose and use the products more wisely, he becomes dependent on others for help and substitutes hope for wisdom.

THE CONSUMER FUNCTION IN OUTLINE

I. NATURE: SELECTION, USE, AND CARE OF THE PRODUCTS OF INDUSTRY.

A. Economic

Spending wisely what one earns is as important as earning.

B. Personal

Individual needs, interests as measures of wise selection.

C. Social

Needs and benefits to the group as measures of wise selection.

D. Technical

Qualitative as relative to function, structure, materials, design. Operation, care and maintenance as elements of utilization.
E. Appraisal

Assessment of values: economic, personal, social, technical.

II. REPRESENTATIVE CURRICULAR COMPONENTS

A. Function

1. How well does it accomplish its function?
2. How easily, simply does it operate?
3. Is it easily serviceable and maintained?
4. Is there a good choice of mechanisms, circuits, formulas?
5. Is there a good relationship of size and weight to function?

B. Structure

1. Is it structurally sound, sensible?
2. Is the new idea in structure better than the old?
3. Is construction appropriate to function and material?
4. Is replacement of parts a desirable feature?
5. Does it express an imaginative solution to a problem?

C. Durability

1. Will it function as long as desired?
2. Is it too durable?
3. What compromises have been made for the sake of durability?
4. Is the selection of materials and structures appropriate to durability?
5. Does the manufacturer stand behind it?
D. Materials

1. Are appropriate materials used?
2. Could less expensive materials suffice?
3. Are the materials repairable?
4. Is excessive care in use required?

E. Economic

1. Is it a bargain when you don't need it?
2. Which is wiser, repair or replacement?
3. Is depreciation a factor?
4. Is the most expensive one the best?
5. How do maintenance costs compare with those of a similar product?

F. Aesthetic

1. Does its beauty originate within itself?
2. Is its beauty refreshing, imaginative?
3. Will it promote harmony within its environment?
4. Is its beauty enduring, or faddish?
5. Does it reflect on the good taste of its owner?

G. Cultural

1. Does it reflect the best out of the past, or is it just old?
2. Does it effectively represent the contemporary spirit?
3. What contributions does it make to the material culture?
4. Does it reflect fine craftsmanship, superior ingenuity?
5. What great names are associated with such products?
H. Safety

1. Is the product adequately protected electrically, chemically, mechanically?

2. Is the operator adequately protected from shock, burns, fumes, etc.?

3. Is it structurally safe?

4. Are its materials appropriate to safety?

5. Will it be a hazard to others?

I. Personal

1. Does it lend real pride to possession?

2. Does its possession reflect favorably on the owner?

3. Does it really make for a finer living?

4. Does it make one's work easier?

5. Does it increase the owners respect for the work of his fellow man, and appreciation of the Greater Wisdom?

J. Social

1. What effects will its purchase and possession have on others?

2. Is selection made as a concession to conformity?

3. Are social standards affected by its possession?

4. What legislative elements are involved?

5. What does it contribute to an improved standard of living?

K. Use

1. Are the controls simple, effective, easily accessible?

2. Is special care required?

3. Is special instruction, skill required?
4. Is it "fool-proof?"

5. Does ability to use it contribute to the growth and achievement of the operator?

L. Appraisal

1. Is the owner happy with it?

2. Has it met with social approval?

3. Does it function as intended?

4. Has it made the desired contribution to a finer living?

5. How can it be improved?

Newkirk and Johnson (41, p. 10) explain that:

Educational experiences with the tools, materials, and products of industry will improve consumer literacy. Industrial Arts courses emphasize organized instruction in consumer appreciation of the products in industry. This is done by rating industrial products, by studying the factors that constitute quality in furniture, radios, automobiles, houses, electrical appliances, and plumbing fixtures, and by studying the principles of design and color combinations, especially as they apply to objects that are used in home living.

THE OCCUPATIONAL FUNCTION

The inclusion of an occupational function may provoke a controversy within the industrial arts profession. Neither Woodward's concept of manual training, Bennett's manual arts, nor Bonser's industrial arts include such a function. The Ohio Prospectus (43, p. 93), whose definition of industrial
arts is being used in this study, does refer to vocational conditions as follows:

Industrial Arts is one of Practical Arts, a form of general or non-vocational education, which provides learners with experiences, understandings, and appreciations of materials, tools, processes, products and of the vocational conditions and requirements incident generally to the manufacturing and mechanical industries.

Industrial Arts is commonly seen as being non-vocational in the sense of training for a particular job. The provision for "... experiences, understandings, and appreciations of ... the vocational conditions and requirement incident generally to the manufacturing and mechanical industries," however, suggests that industrial arts has a responsibility of a vocational type.

It has become increasingly important through the years that industrial arts provide the student with these experiences, understandings, and appreciations. Two reasons seem especially logical. One is that a study of American industry without concern for its occupations would be little more than a technical study. The second is that as industry becomes increasingly large, automatic, and complex, it becomes increasingly difficult for a man or woman to see himself as a part of it, to make occupational choices. The accompanying analysis of the occupational function indicates the nature of an educational service which industrial arts can logically and legitimately provide.
In the definition of industrial arts for this study, provision is made for occupational emphasis. This will vary with the student, his maturity, and with his needs. In the elementary school a study of occupations reveals how people earn their living; in the secondary school study and activity are occupationally directed and oriented.

A Guide, Industrial Arts in Florida Schools (20, p. 73), states that:

On the senior college level in the industrial arts program may render important services in addition to regular teacher preparation for that area. In addition to functioning as a general education background desirable for all students, it also serves to raise and implement scholastic attainments, ideals, and standards. Suggested areas of concentration for those pursuing special types of instruction should include cultural, related technical, and special courses. This specialization develops skills leading to a variety of professional work such as advanced mechanical and architectural drafting, engineering and special shop courses which may include machine shop practice, pattern making, foundry work, and other specialized shop instruction that may be desirable. The senior college has a special role to play in the continuing education of teachers for special areas. Elementary teachers and secondary school science teachers often wish to strengthen their skills in manipulative work; home economics teachers are interested in homecraft skills; physical education teachers want to become familiar with the recreational possibilities of craft courses; occupational therapist desire to use manipulative work with tools and materials for therapeutic values and applications in programs for exceptional children. There are, in addition, the inservice courses to strengthen their teaching field or to gain experience in new industrial arts areas as well as to advance professionally as teachers.

There are also two of eight primary objectives as set forth by a committee appointed by the United States Commissioner
of Education to evaluate industrial arts in American schools (27, p. 77). These objectives which lend themselves forcefully to the occupational function are:

1. **Economic advancement within the present occupation.**—The adult school provides educational opportunities through vocational extension courses for those persons who desire particular training supplementary to their daily employment. It also provides, through as wide an industrial arts program as is feasible, opportunities for those who feel the need for broadening their interests, of economics, and of adjusting their personality and talents to the occupational world.

2. **Training for a New Occupation.**—Trade preparatory vocational courses may be offered in free-time classes, if conditions are such that these courses would be truly functional in aiding the student to gain a foothold in the new occupation. At entrance upon employment in the new line, objective (1) becomes dominant with many individuals as they realize the necessity for continued improvement. On the other hand, the persons who feel the need for guidance for exploration of occupations, or for personality adjustment to industrial conditions, are served by industrial arts facilities, and are the better oriented in planning for a new vocation.

**THE OCCUPATIONAL FUNCTION IN OUTLINE**

I. **NATURE**

A. The jobs that industries provide

B. How people earn their livings in industries

C. The changing nature of the job

D. Requirements for a successful work experience

E. Opportunities for private business

F. Educational requirements and opportunities
II. REPRESENTATIVE OCCUPATIONAL COMPONENTS

A. Orientation
opportunities qualifications status
requirements

B. Guidance
testing-inventory counselling follow-up

C. Exploration
reading field trips interviews
films

D. Selection
criteria health evaluation
techniques safety

E. Try-out
industrial arts Co-op programs
salable skills part-time work

F. Entrance
applications credentials employment
interviews evaluation

G. Rewards
salaries incentives security

H. Promotion
training experience responsibility
education

III. REPRESENTATIVE CURRICULAR COMPONENTS

A. Competences
knowledges skills attitudes
interests

B. Attitudes
work success values
supervision
C. Knowledge of Self

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<thead>
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<tr>
<td>aptitudes</td>
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D. Occupational information

<table>
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<tr>
<td>qualification</td>
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THE RECREATION FUNCTION

The analysis of the recreation function describes a concept of industrial arts recreation which is essentially a proposal, a proposal made because ideas for implementation may help to activate the function. Research on the recreational possibilities in industrial arts is yet to be done. Recreation as a profession has developed since World War I. Its philosophy, values, and goals, express a concept of social and individual service which the industrial arts profession would do well to study. By doing so, industrial arts will probably arrive at a fuller understanding of its own recreation function.

Such a study is almost imperative now, especially in view of the substantially increased leisure made possible by technological development. As the length of the work week in industry has decreased with new technological developments to today's approximately forty hours, it is expected to decrease for the same reason to perhaps twenty hours within the next few decades.
Therefore a more detailed analysis of the recreation function is made than was made for the other functions. Three reasons seem to justify this additional consideration. The first is that what the student learns in school should be as applicable for leisure as for school. The second is that the technology exerts as powerful an influence on a man's leisure as on his work; and the third is that all of the other functions of industrial arts are conceived as operating within the framework of recreation. If these reasons are sound, then industrial arts must give specific attention to its recreation function. Two basic possibilities exist: the function should receive due exercise in the regular school industrial arts program, or it should be singled out for specific emphasis. Industrial arts programs for adults is a good example. Both are described later.

The development of the analysis of the recreational function follows this pattern: an outline analysis is made to identify the concept of recreation for this study; a brief review of origins of the function is added perspective; a philosophical background gives meaning and justification; and finally, recreation media are identified and applications are pointed out.
THE RECREATION FUNCTION IN OUTLINE

I. NATURE

A. Recreation seen as "re-creation"
B. Work as recreation
C. Leisure for learning; learning for leisure
D. Recreation for liberation, self-expression, creativeness
E. Recreation as contributing to personal growth, enrichment, achievement
F. Recreation as rehabilitation and therapy—a new potential for industrial arts

II. APPLICATIONS OF RECREATION THROUGH INDUSTRIAL ARTS

A. Crafts
   1. Creating with materials and processes
   2. Constructing with hand, tools, machine
   3. Collecting
   4. Application: school, home workshop, camp, recreation agency

B. Therapeutics
   1. Therapy
   2. Rehabilitation
   3. Application: school, home, hospital, "golden age"

C. Economic
   1. "Do-it-yourself"
   2. Design, construction, repair, maintenance, refinishing
   3. Application: school, home, church, park, playground, community and private agency
4. Home workshop

D. Community Service

1. School recreation programs
2. Community agency programs
3. Private agency programs
4. Leadership training programs
5. Application: Playground, clubs, shows, contests, sales

III. REPRESENTATIVE CURRICULAR COMPONENTS

A. Creative design

B. Materials as media for expression

C. Construction as processes for self-expression by hand, tool, machine

D. Research, invention, experimentation for depth in experience

E. Collecting as vicarious experience

F. Leadership training for school and community service

G. Personnel Management

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<tr>
<td>authority</td>
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<td>problems</td>
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</table>

H. The industrial Society

<table>
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<tr>
<th>structure</th>
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<tr>
<td>standard of living</td>
<td>legislative</td>
<td>limitations</td>
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Types of industrial arts activities for recreational values have been discussed and outlined by the previously mentioned committee appointed by the United States
Commissioner of Education (27, p. 82). Their findings show that:

Industrial arts experiences desired by adults for recreational purposes may lie in such varied fields as woodwork, metalwork, electricity, radio, automobile maintenance, the plastic arts, the graphic arts, Ceramics, textiles, costuming, pageantry, puppetry, stagecraft, interior decorating, photography, and jewelry making. Men and women alike may be interested in any of these handicrafts. The only limits to the variety of school offerings are those of financial and physical resources. Some individuals will desire to learn enough about tools to operate a home workshop; still others will ask for instruction in various home repairs. All will find enjoyment for the leisure hours.

This committee further points to the specific activities adult schools may provide in recreational industrial arts, if facilities can be made available. The activities are illustrated, but by no means exhausted, in the following list:

Wood and metal finishing:
  painting, staining, graining, varnishing, spraying.

Construction of articles for the home, church, club:
  Furniture, toys, camp outfits, screens, radio sets, baskets, puppet stages, puppets.

Model building for personal or children's use:
  kites, model boats, miniature airplanes.

Leather crafts:
  Handbags, purses, cardholders, bookbinding.

Home repairs:
  Fixing electrical cords, repairing fixtures and appliances, replacing washers in faucets, cleaning traps, adjusting tank mechanisms, patching holes with plaster, refinishing cement walks, sharpening tools, adjusting motors, locks, or
hinges, replacing chair seats, rehanging window shades.

Jewelry craft and art-metal work:
Designing and making rings, brooches, chains, bracelets, trays, plant stands, ornamental containers.

Modeling and carving in soap, clay, or wood:
images, plaques, desk accessories, frames, pottery.

Automobile maintenance:
Lubrication, tire repairs, carburetor adjustment, cleaning, battery servicing, lamp replacement.

Textile craft:
Designing and developing weaves, dyeing, garment making.

Gardening:
Building rustic furniture, making bird baths, bird houses, garden ornaments, trellises, replacing handles on tools.

The committee stresses the fact that the content of the school instruction in industrial arts work of this sort must take into account any legal requirements which may enter into certain of the items of home maintenance. The amateur craftsman must know that electrical installations are subject to official inspection and certification; that only a registered plumber is authorized by law, in some localities, to do certain types of plumbing work; and that an extension to the house, or a new garage or shed requires a legal permit in many communities. He learns through the school to stay within the field of recreational handicraft. His activity is essentially play and avocation rather than production.
The four selected functions of industrial arts which identify its mission were analyzed in this chapter. These are the technical, consumer, occupational, and recreational. The analyses serve to clarify and identify the nature and content of industrial arts for adults as a background for subject matter. Curricular components as drawn from the analyses will be considered in this study as representative of subject matter elements inherent in the functions.
CHAPTER IV

TYPICAL INDUSTRIAL ARTS PROGRAMS FOR ADULTS

An over-view of American society from 1921 to the present time reveals many changing patterns in population, technology, and economic conditions, patterns which have inevitably affected education. The forms which education takes, the kinds offered, and the age groups of the population to which educational opportunities become available, are determined by the needs which these changes generate. The great expansion of adult education in mid-century is the response of American society to new requirements.

Malcolm Knowles (76, p. 21) gives an accurate explanation when he says:

The central characteristic of the economic trend has been bigness—in industry, in labor, in the national debt, in personal wealth, in agriculture, and in government. The social changes with the greatest implications for adult education include a generally higher standard of living, a broader distribution of luxury goods and services, greater mobility—both geographical and social, a marked improvement in health conditions, and the expansion and coordination of welfare and recreational services.

Since living conditions are always changing and new demands are placed upon the population, each characteristic of civilization, both old and new, creates needs for particular
understanding, information, skill, and insight on the part of those who make up the society and keep the civilization in operation.

To live comfortably and confidently, to cope with ever-changing problems, and to enjoy the potential satisfactions all about them, people must understand change and its consequences and be able to adapt themselves and their institutions to what is in some respects a new world each day. This requires flexibility of attitudes, perspective, values, and relationships. Leaders in the field agree that the job of adult education is to help people understand the basis of order and security in a world of rapid change, to build their goals realistically in fitting terms, to help people understand their problems, to discover the resources which are available to find a way to solve problems, and to reach goals under current circumstances. One of the purposes of this study is to investigate five types of industrial arts programs and to describe the purposes, structure, and service, which indicate the educational opportunity adults have in their quest for better living. The programs listed were selected for the following reasons:

1. They are sponsored by recognized school and community agencies.

2. They employ educational methods.
3. They or their direct antecedents have a history of at least ten years of continuous existence.

4. Documents (published and unpublished) are available describing their programs.

5. They are now in existence.

To be sure, a number of programs fulfill the preceding criteria, but they are omitted because they are not relevant to a study of industrial arts programs for adults. The five types of programs are as follows:

1. Typical Urban and Rural Centers and Public Day and Evening School Programs.

2. Programs for the Rehabilitation of Veterans and the Handicapped.

3. The Mott Foundation Program of Adult Education at Flint, Michigan.

4. Community Center Programs.

5. The Central State College Program for Adults.

Making due allowance for lack of complete information on all aspects of these types of programs, the investigation will be limited to a description of the purpose and organizational structure, enrollment, staff, program, and services.

TYPICAL INDUSTRIAL ARTS PROGRAMS

One hundred years ago, when the adult education movement was getting underway, the role of the public schools was primarily thought of as offering opportunities for
immigrants from abroad to learn English or as providing opportunity for boys and girls who had to leave school to go to work. These concepts of the role of the public school are still valid, and programs in these areas still represent an important part of the public school's responsibility.

In time, however, the public schools program was broadened and the adult curriculum expanded to make opportunities for employed adults to study a new occupation or to increase their skills in the occupation in which they were employed.

In addition to this development in adult education arose the recognition of homemaking as an important vocation. Therefore, the public schools began to offer educational services designed to help mothers and fathers create better and more comfortable homes for themselves, and their children. Soon the pursuit of avocational interests became an established part of the adult curriculum. These programs, like the adult classes for immigrants, continue to be important in the curriculum of today's public school planning. Throughout their history the public schools have helped many adults acquire the educational opportunity denied them in their youth.
The investigation of public school curriculums in the United States revealed that in most cases the curriculum was designed to meet the following needs:

1. To combat illiteracy and undereducation
2. To offer a program of family life and parent education
3. To extend vocational opportunities
4. To teach fundamental principles of democratic society
5. To provide for all citizens continuing public-affairs education on community, national, and international questions
6. To help adults understand their schools in order to make intelligent decisions regarding them
7. To provide educational methods
8. To further health and safety in the community, at home, and on the job
9. To teach avocational skills where they fill a need
10. To provide inservice training for educators
11. To offer a rich variety of liberal arts and science activities
12. To provide a wide range of industrial arts courses

It was also found in this investigation that community problems of population re-adjustment, urban development, public health, traffic safety, and other civic responsibilities engage the attention of the adult education programs,
so that decisions on these issues are made by an informal and alert citizenry. The programs are democratic in operation. They are open to all who can meet the academic or technical requirements. Their democratic purpose and design are to develop the talents of the individual and to strengthen society as a result.

As community conditions warrant, adult-education programs are also conducted in all convenient locations, such as libraries, museums, business establishments, and industrial plants. The available facilities of educational television and of commercial radio and television are exploited to the fullest in bringing educational opportunities to as many adults as possible. School facilities are used for purposes such as institutes, forums, lectures, discussion groups, leadership training workshops, fact-finding committees, film showing, music and drama productions, meetings of parent groups, and a wide variety of significant leisure-time activities.

In a working paper prepared by the Adult Education Association Consultative Committee, Cyril O. Houle (72, p. 3) said:

A sound program of adult education is built upon cooperation and adequate information.
This report, "An Overview and History of the Field of Adult Education" (Ibid., p. 6), in describing an effective program for adults states:

There is usually an advisory council of lay citizens in the community to study the local need and to help in organizing and sponsoring the program. The public school takes the initiative in establishing such a community voice where none exists. This committee offers to serve as a clearing-house for adult education agencies and organizations.

The predominant theme permeating the literature and brochures announcing programs of industrial arts for adults in the schools in the United States, has been clearly stated in the Richmond, Virginia Public Schools paper, Better Schools (84, p. 1):

The total field of education is gaining emphasis and impetus in a world-wide struggle for technological preeminence and survival. If the education of children is an important element in this struggle, the continuing education of adults is paramount. Today's problems cannot wait upon tomorrow's solutions. If any kind of world is to be bequeathed to our children, it shall be framed by today's adult population. It is only by the intelligent marshalling of resources including these adult resources that we can hope to maintain a free society.

Wherever there is an opportunity, more and more adults are turning to their public schools for education ranging: (a) From the basic skills of reading, writing, and arithmetic, (b) To the investigation of social, economic, and technological problems in an atomic world.

The aim of adult education then is to offer adults the opportunity to take up education where it was prematurely interrupted; to provide the means to develop old skills and to learn new ones which will improve the well being of our students and their families.
With public school systems adhering to the above stated belief and practice in making provisions for the education of adults, it was not difficult in the investigation of the 185 who responded, to categorize similarities in the school programs. Two specific areas proved important. They were (1) operational procedures and enrollment and (2) courses offerings.

THE PHILADELPHIA EVENING SCHOOLS

A standard set of operational procedures prevailed. The pattern in the Philadelphia Evening Schools (82, p. 1) for the 1960-1961 academic year is a good example of the operational procedures used in a larger city:

Who May Enroll.

1. Adults 18 years of age or older, not attending a public day school, may enroll. No prerequisite required.

2. High school graduates or not.

3. Continuation students employed on a full time work permit who are also attending a day continuation class.

4. Regular day high school students only upon special permission from both day and adult school principals.

Costs.

1. A voluntary student fee of twenty-five centers per year is payable upon enrollment.

2. A tuition of $3.00 per course is charged. The following exceptions are to this rule:

Classes

1. Elementary subjects
2. Language

3. Citizenship

4. Industrial Classes

**Persons Exempt from Tuition Fees**

1. Men over 65 years of age, women over 62 years of age, minors, and others exempt by law.

2. Persons taking courses under counselor advice leading to a high school diploma.

3. Special Class Fees: The purpose is to provide personally consumable materials and services not furnished by the Board of Education and are designated to be used by the students and for the students of the class.

**Fees Payable Each Semester.**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Auto Body Fender</td>
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<tr>
<td>Auto Electrics</td>
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<tr>
<td>Auto Mechanics</td>
<td>1.00</td>
</tr>
<tr>
<td>Cabinet making</td>
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</tr>
<tr>
<td>Clothing</td>
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<tr>
<td>Jewelry</td>
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<tr>
<td>Jewelry and Lapidary</td>
<td>3.00</td>
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<tr>
<td>Professional Model</td>
<td></td>
</tr>
<tr>
<td>Fees Paid by Class</td>
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</tr>
<tr>
<td>Home Decorating (Lamp shades)</td>
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<tr>
<td>Machine Shop</td>
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<tr>
<td>Millinery</td>
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<tr>
<td>Power Sewing</td>
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<tr>
<td>Radio servicing</td>
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<tr>
<td>Upholstery</td>
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<td>Cost of Flowers</td>
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<tr>
<td>Cost of Materials</td>
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Textbooks. Textbooks provided by the Board of Education are issued on deposit, which is refunded upon the return of books. Certain text materials, not furnished by the Board of Education, must be purchased.

**Method of Enrolling.** Students choose the subjects they wish to take. During the first three weeks students
enroll directly in the class they wish to attend. After the first three weeks, enrollment is only taken in the main office.

**Counseling Service.** A counselor is available each evening to consult with students concerning educational and vocational problems. Students working for high school credits must see the counselor.

**Certificates and Credits.**

1. Certificates of completion are given to those who desire them, if they have attended 80 per cent of the class sessions.

2. High school credits are given to students who pass the course required. Students must apply for credit at the beginning of the term.

**Refunds.** Refunds can be made only if a class is discontinued for any reason, to veterans whose fees are paid by the United States Government, or to students who drop out of class prior to the third class meeting. In case of drop-outs, the student is required to notify the instructor of the intention to drop. No refunds are allowed after the third session of any class.

**Registration.** The adult evening schools are usually open for registration from 7:30 to 9:30 p.m. on evenings designated. Persons desiring to take any of the commercial, distributive education, technical, or other formal courses should be sure to register during that week in order to
receive all the classwork. However, enrollments are accepted at any time for those who are able by previous experience or training to fit into the class work at the time they desire to register. Registrations for recreational and hobby courses are usually accepted at any time as long as accommodations are available.

Veterans. Veterans attending these schools under the G I Bill are responsible for verifying their class attendance to the office, before the third of each month, prior to application for G I benefits.

The School Schedule. Schools are open four nights weekly from 6:45 to 10:00 p.m. Classes meet Monday and Wednesday, or Tuesday and Thursday, from September to June. The adult approach of teacher and student dominates classroom procedure and administrative leadership.

How to Earn a High School Diploma. The five sources of credit which may be applied toward a high school diploma, are as follows:

1. Credits previously earned through attendance at accredited secondary schools.

2. Credits earned in public adult school classes.

3. Credits granted for having completed courses offered by the Military Services.

4. Credit through participation in the testing program as established in the Los Angeles Schools.

5. Credits granted upon verification of work achievements.
Day Extension Classes. Day classes for adults are held in suitable places where accommodations can be found and for which a competent, licensed teacher can be secured. Art, ceramics, handicrafts, jewelry, knitting and crocheting, lamp shade making, leathercraft, millinery and sewing, are some of the classes which have been held during the day in former years. Home and school workshops have contributed much to the growth and stature of those identified with these activities.

Personnel. A large active group of administrators and teachers has been selected on the basis of competence in planning adult activities and working with adults. The teachers are specially trained in their subject fields. Qualified counselors are also on duty in some of the evening schools to help students identify, interpret, and find possible solutions to their problems.

Course offerings in industrial arts for adults in all the school systems were nearly uniform. Although some schools offered a wide variety of industrial arts courses, others were limited in their offerings by circumstances such as poor enrollments, lack of community interest in courses, inadequate facilities, and insufficient budgetary appropriations. Programs such as the ones conducted in Philadelphia, Chicago, New York City, St. Louis, Cleveland, Detroit, and Los Angeles are examples of the wide range of industrial arts available to adults in urban and rural
communities. Following is a sampling of courses available:

1. Automobile Mechanics
   a. Body and Fender Work: fundamental principles of metal straightening, gas welding, body soldering and spray painting.
   b. Carburetion and Ignition: theory and practice applied to the modern automobile.
   c. Chassis and Engine practical and related instruction covering automotive electricity, power plants, oiling and cooling systems, transmission, universals, and brakes.
   d. Auto Mechanics for Women: A non-technical course covering auto operation, care, maintenance and upkeep.

2. Woodwork
   a. General: Organized to provide basic skills and understandings of bench work, machine operation and other phases of woodworking.
   b. Cabinetmaking: the qualities of various woods, the techniques of finishing new work and of restoring valuable old pieces.
   c. Carpentry: the erection, modernization, repair of buildings, and reading of specifications.
d. Woodworking for the Home: building of bookcases, benches, clothes racks, shelves, breakfast nooks, gates and garden fences.

3. Blueprint Reading: provisions are provided to develop ability to interpret plans.

4. Electricity: training in light and power wiring, maintenance and repair work, radio servicing, telephone and public utilities work, armature wiring, shop practices in the theory of electricity and magnetism, blueprint reading and the National Electrical Code.

5. Radio and Television: review of basic principles, troubleshooting, and repairing radios and television sets.

6. Mechanical Drafting: lettering, geometric constructions, orthographic and auxiliary projections, development and intersections, and other standard processes with related information necessary in the presentation of various machines.

7. Sheet Metal Drafting: pattern layouts and construction involving straight line, radial, and cylindrical developments.

8. Shop Mathematics: mastery of the minimum essentials of arithmetic through algebra, geometry, and trigonometry, with emphasis on shop applications.

9. Graphic Arts: hand composition, linotype operation; automatic, and cylinder presswork and camera, platemaking, stripping, and presswork.
10. Welding: gas and electric welding, including vertical, horizontal, overhead, and special techniques, welding of magnesium, aluminum, and various alloys. Principles of arc and oxyacetylene welding.

11. Photography for the Amateur: review of basic principles to improve family pictures, movies, slides, snapshots, and to gain experience in color, black and white photography and polaroids.

12. Ceramics, Elementary: art phases of the ceramic field—materials, forming, decorative processes, glazing, and firing with laboratory practice in building pottery by hand.

13. Ceramics, Advanced: pouring of molds or slip casting, underglazes, different types of glazing over glaze.

14. Ceramic Sculpture: clay modeling and experimentation in the field of wood and stone sculpture, portraiture.

15. Enameling on Copper: decorative viterous enamels on copper, stenciling, sgraffito, use of gold and silver foil, separation enamel, application of lustres and over-glaze together with wet inlay and clisonne. A variety of jewelry as well as trays, dishes, bowles, boxes and plaques can be made.

16. Handicrafts: development of creativeness, metal working, relief printing, sketching, clay modeling, copper picture embossing, and the making of various articles such as belts, purses, wallets, and jewelry.
17. Lapidary: the technique of cutting and polishing common and valuable stones for ornamental display and personal wear.

18. Domestic Home Management: efficient techniques in housekeeping for adults preparing to work as domestics.

Summary. It is evident from this extensive list of courses, that the Public day and evening schools are meeting the needs of adults in many sections of the United States. However, it is also clear that some of the program directors are not differentiating between vocational education and industrial arts. It should be emphasized that the purpose of industrial arts is to provide a preparatory type of instruction in the development of skills, safety, technical, and related knowledge, as useful information for preparing persons for happy use of leisure time and for useful employment, while vocational education prepares one for employment and provides instruction of an extension or supplemented type in the same areas for persons already employed.

THE CHILLCOTHE VETERANS PROGRAM

This rehabilitation program for veterans in Southern Ohio is a typical one. The shops on an average are about 35 by 80 feet and well equipped. There is a woodwork, an electronics, a shoe, an upholstery, a machine, a printing,
a photography, and a ceramic shop. There are not any instructors with less than 15 years of experience.

The most frequently elected courses are photography and woodwork. The total enrollment at the time of visit was 130. This program was established in 1946 by the Veterans Administration.

Volunteer help and rehabilitation research have contributed much to the development of the program, however, one of the great problems to be resolved is adjusting the program for the aging patients. The regular staff committees consist of in-service training, and fire and safety. The program is carried on 52 weeks a year. No night courses are offered.

Affiliated organizations are the Gray Ladies and the American Association of Rehabilitation Therapists. Counseling services are provided by staff psychologists and social service. This program is one of training for treatment purposes and no formal certificate is issued.

The big project sponsored each year concerns hospital day exhibits. These events consist of a parade, dancing, swimming, golf, baseball, open-house dancing and special events.
Programs for Veterans and the Handicapped

Public attention was focused at the end of World War II on the thousands of handicapped veterans. Rehabilitation programs were established in Veterans Administrations hospitals, and a large percentage of the handicapped have been and are being successfully rehabilitated. At the same time there was a large number of civilians who were in need of rehabilitation. It has been estimated that as much as one-fourth of the world's population today is physically disabled. International interest in this problem has been evidenced in the past five years by the fact that visitors from more than twenty foreign countries have studied the rehabilitation techniques practiced in veterans administration hospitals throughout the United States.

Unfortunately, accurate statistics are hard to obtain, but it has been estimated that there is today a backlog of over two million physically disabled in the United States who could benefit from rehabilitation. Unless drastic steps are taken, this backlog will increase, for each year an additional 250,000 are reported to be in need of rehabilitation. State and federal facilities are able to care for only a small percentage of this group at the present rate. The number of specialized agencies such as Goodwill Industries, public and private rehabilitation centers, and therapy wards of urban general hospitals, which for many years have been serving the handicapped, are too few in most cases, to
reach more than a fraction of those needing aid. Frequently, too, they are not equipped to offer a comprehensive rehabilitation program.

One of the most important problems facing the nation today is the handicapped patient himself, for it is only an understanding of the patient as a "whole" person, psychological and vocational needs—that it is possible to plan for a comprehensive program. A program should be planned to meet the needs of each individual patient. Unfortunately no two patients are alike; so a diversified program is essential to meet the needs of all.

According to Dr. Henry H. Kessler (75, p. 101) there are three groups of disabled who may be expected to benefit from rehabilitation. First, there is the fully productive group who may ultimately be expected to be fit for employment under normal industrial conditions. Second, there is the partially productive group, who can be fitted for employment under normal conditions, provided allowances are made for disability. Frequently, they must be convinced they are employable. Many such people today find work in such places as Goodwill Industries or in sheltered workshops. And third, there is the group who are either bedridden, or confined or so disabled as to require assistance in transportation. Even if their hope of being rehabilitated as self-sufficient members of society is very slight, they may
be given an interest in life and taught to care for their daily needs.

The Areas of Rehabilitation. These concerns the restoration of the handicapped to the fullest physical, mental, social, and economic usefulness of which they are capable.

The rehabilitation of disabled individuals consists of four phases: hospitalization and medical treatment, functional re-education and therapy, pre-vocational advisement and training, vocational placement and follow-up. The services in connection with these four phases are closely integrated in a well planned rehabilitation program.

At the close of World War II, the Veterans Administration set about to expand its rehabilitation services so that every sick, injured, or disabled veteran could be rehabilitated. It was first necessary to enlarge the physical medicine and rehabilitation service to make available every possible therapeutic means of treating the patient. Manual arts therapy, together with physical therapy, occupational therapy, corrective therapy, and educational therapy provided a major contribution to the program.

Investigation for this study has revealed that hospitals for veterans and rehabilitation centers in thirty states offered the same programs of study for patients and the handicapped. These programs, planned to discover the
aptitude and interests of adults, cover such areas as:

1. occupational therapy
2. physical therapy
3. vocational rehabilitation
4. adapted physical education
5. manual arts therapy
6. prosthetics and orthotics

**Occupational Therapy.** This is a branch of medicine closely allied to nursing, social service, physical therapy, and rehabilitation. It uses creative and manual activities, some involved in daily living, or in educational and recreational areas and orientational training necessary for the physical, mental, social, and economic adjustment of the patient. It is treatment prescribed by physicians and administered by therapists trained in industrial arts programs to hasten recovery from injury or disease.

**Physical Therapy.** This is an associate medical profession, employing therapeutic exercise (including all physical rehabilitation activities), relaxation, heat, light, electricity, water, and massage in the treatment of pathological conditions.

**Vocational Rehabilitation.** This aids veterans and the handicapped in five basic phases: work evaluation, job training, workshop experiences, job placement, and travel training for the blind. Trainees work at a variety of jobs in an environment similar to industry.
Adapted Physical Education. This is designed to meet the needs of the individual and is restricted to corrective activities that, in the long run, enable the physically handicapped to function and manipulate limbs, muscles, and other ambulatory and sensory movements more effectively.

Prosthetics and Orthotics. These are concerned with the design, fabrication, and fitting of artificial limbs. Orthotics is concerned with the design, fabrication, and fitting of braces. Starting with measurements, tracings, or a cast of the patients affected limb or body part, the prosthesis-orthotist selects the appropriate materials and then fabricates, aligns, and fits the prosthesis or brace to the patient for the purpose of correcting or minimizing disability.

Importance of Manual Arts Therapy. This is concerned with industrial arts. It is a therapy which uses the tools of industrial society for the purpose of medical rehabilitation. The manual arts therapist works under the direction of a physician who prescribes when and what the patient needs for medical and rehabilitation reasons. The therapist uses industrial arts for curative rather than educational purposes. He may select light mechanics to increase finger dexterity or woodworking to raise the power of weak arm muscles. He may use electronics to build up the work tolerance of a bed patient. He may suggest a difficult
machine shop project so the patient may prove to himself that he is ready to go to work. While the industrial arts teacher employs educational programs in scheduled classes, the therapist uses individualized courses of treatment because of their therapeutic and pre-vocational significance. Following the physician’s prescription, he uses industrial arts and creative activities to help the patient help himself. The therapist works as a member of a medical rehabilitation team with other paramedical personnel such as physical, occupational, corrective, educational, and speech therapists, social workers, and vocational counselors.

Going beyond handicrafts, the therapist uses in a rehabilitation setting involving the tools, machinery, materials and procedures of contemporary industrial arts programs. The manual arts therapy clinics are the equivalent of industrial arts laboratories, and offer such mechanical, technical and recreational activities as woodworking, metalworking, plastics, jewelry, electricity, electronics, automobiles, light mechanics, drafting, blueprint reading, fine and commercial art, photography, needle trades, and agriculture. Training is provided in various semi-skilled and skilled occupations in accordance with the interests and abilities of patients to benefit.

Activities used as treatment vary in each hospital or center on the basis of two factors: (1) geographical location of the hospital, and (2) types of patients. If a
hospital is situated in a strictly farming area, activities such as farm implement repair, woodwork, auto mechanics, and radio repair receive major interest. In a hospital located in a highly industrial area, activities such as machine shop, woodwork, electronics, sheet metal, drafting, and photography receive greater stress. Generally speaking, the activities found in most large hospitals can be classified under one of five areas: metalworking, woodworking, electricity, graphic or applied arts, and agriculture.

The scope of the program can be grasped more readily by the number of diversified occupations represented in activities in the manual arts therapy clinics. For the majority of patients this means either an opportunity to explore the possibilities of many phases of work, and to relearn old skills in a new vocation better adapted to physical and mental requirements. Although manual arts therapy is not designed as training, the patient develops, while receiving treatment, a certain degree of skill that may be considered a valuable byproduct of his treatment. At the same time his mental worries become less acute as he gains confidence in his future earning power.

According to the *Occupational Outlook Handbook* No. 998 (89, p. 36), four out of every ten workers in the United States today are employed in occupations of either an industrial or vocational nature. Manufacturing industries employ the largest number of people and offer jobs to many different
kinds of workers, the largest groups being semi-skilled or machine operators.

The following list shows how different manual arts therapy activities offer patients treatment and stimulate interest in a number of different occupations in which the individuals may become skilled or semi-skilled. Treatment may be provided in more than forty-two different occupations. This provides a rather complete group from which a patient may explore his potentialities. A patient may choose to pursue the subject further, thus qualifying for a professional or technical vocation.

This substantiates the contribution of the adult programs in industrial arts to the rehabilitation of veterans and the handicapped.

Summary. The investigation of adult education programs in hospitals for veterans, of rehabilitation centers, and of public and private institutions, indicates that industrial arts activities are being used more and more as a basis for occupational rehabilitation because of their therapeutic values for patients of all ages. Manipulative work has long been recognized for its value in promoting mental and emotional stability. It was conclusively proved by study teams as veterans hospitals that industrial arts activities provide a natural medium for relieving tension. They follow man's deep natural urge to translate thought into skill and skill into thought. They provide creative
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experiences which teach how to correlate acts with correct thought patterns, leading to the association of thought with foresight and foresight with achievement. The promotion and encouragement of recreational interests were found to be important to all individuals. Industrial arts courses, it was found, served in the stimulation and development of worth while hobbies. The study and manipulation of tools and materials involving the personal creation of articles of beauty and utility, give lasting satisfactions which provide pre-vocational and recreational values, and contribute to good citizenship.

**Social Values of Industrial Arts.** The neighborly talks such as took place at the old cross-roads store need reviving. If adults attend industrial arts classes and do nothing except talk with their neighbors the meeting would be a success from this point of view. In the industrial arts laboratory they are not concerned with formalities, here they may feel at ease. This means of bringing adults together should be recognized for such association with one's neighbors.

**THE BRIGHTMOOR COMMUNITY CENTER**

Originally established in 1923 as the Brightmoor Health Center by the Detroit Chapter of the American Red Cross, the organization changed its name in 1924 to the Brightmoor Community Center and broadened its program to
include activities common to neighborhood centers. It became an affiliate of the National Federation of Settlements. This is a non-sectarian, non-denominational neighborhood center open to all regardless of affiliation, ethnic background, creed or age. It is governed by a volunteer board of directors composed of representatives from the neighborhood and from the community at large. Direct administration of the program is the job of the Executive Director, six staff associates and a number of staff and volunteer assistants on a part time basis.

Brightmoor Community Center is a multi-function agency whose first concern is the neighborhood and its residents. It has no set program; rather it strives to see that needs are met, although it does not attempt to meet all needs. It recognizes no set boundary. Instead, it views its immediate neighborhood as a place in which to begin. Some problems are indigenous to the neighborhood, but many needs are similar to those found in any community. The neighborhood is where the Brightmoor Center begins its work but it is definitely not where its work ends. The activities or programs of Settlements and Community Centers may differ considerably from each other. However, their function or approach or methods are basically the same. That is, while the things that settlements and neighborhood houses have done over the years may have changed considerably in
content, their approaches in working with neighborhoods still remain the same.

Brightmoor Community Center uses a general approach to neighborhood problems (social work, research, demonstration projects, experiments, social education and action, etc.). It focuses on problem-solving through joint planning and efforts of lay and professional people. It gives up programs or services when such services or programs are being provided by other organizations, even when these activities may have been started or developed by the Center. Perhaps the most common element found in all settlements (or Neighborhood Houses or Community Centers) which are affiliated with the National Federation of Settlements and Neighborhood Houses is the use of an eclectic or general practitioner approach in working with individuals, groups, neighborhoods and communities, guided by a philosophy which asserts equal rights and equal opportunity for all. A second common element is the focus of settlements on the individual and the family as a whole in their place of environment. A third common element is the practice of working to alter, eliminate or alleviate socio-economic and cultural conditions which inordinately affect the health and welfare of people.

FUNCTIONS OF COMMUNITY CENTERS

Due to the recency of the urban "community center" movement, which started in the early forties, there is more confusion regarding the meaning of this term than that of industrial arts. A community center may be anything from a
clubhouse or factory recreation room to a school program which serves all persons living in the community via social, moral, recreational, educational, and physical development.

In other words, the term "Community Center" is loose and has resulted in confusion concerning the work and its purpose.

The Encyclopedia Britannica (18, Vol. 6, p. 137) gives the following concerning this topic.

Community centers, a phrase used in the United States to describe rooms or buildings, often public school buildings, in which all residents of a village or small town, or neighborhood of a city may meet for entertainment, recreation, educational pursuits, cultural, civic, or other activities. Groups of women, agricultural organizations, religious associations, or community societies representative of the major social groups in the community administer the buildings now owned by governmental agencies.

Clarence A. Perry (46, p. 1), of the Russell Sage Foundation, makes this statement in his First Steps in Community Center Development:

This institution is variously known as "social center," "recreation center," "civic center," "evening center," or "neighborhood center." Just now the name "community center," because of its obvious appropriateness, seems to be the one more generally used. But whatever it is called, the thing itself . . . is the organized use of public school buildings for purposes other than the original one of educating children. . . . The activities conducted may be recreational, social, civic, or cultural.

This quotation presents a broad concept of a community center which seems to be the more desirable type. In this study a community center is interpreted in a broad sense, a comprehensive rather than a limited type of program. This
does not imply by any means that the programs in each community will be the same; it simply means that these programs consider the entire community rather than a special group.

Existing research studies classify community centers in two categories: *general* and *special*. A *general* center is one in which there has been no element of selection. Any normal community which has no special forces usually comes under this heading. The participants in the various programs are the educated and the illiterates; babies, youths, adults, the strong and the feeble; pastors, farmers, carpenters, unemployed; the poor and the wealthy. A *special* community center is one in which some selective force has been active. Examples are "Senior Citizens Centers," camps, settlements houses, student centers, and recreational buildings in restricted housing areas. Attention is given in this study to both types and to the diverse programs and services being offered.

**Industrial Arts Programs for Adults.** Community centers and their programs in California, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Massachusetts, Missouri, Nebraska, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia, and Washington, D.C. were investigated. The industrial arts offerings were uniform, and varied only in the number, not in the quality of courses that adults could select. Study
of the courses and their descriptions revealed their similarity, both in spread and content, to those offered in the evening schools sponsored by local boards of education. There was wide variance in the community centers in operating procedures involving fees, length of courses, attendance requirements, and special services. Most of the centers collected a small fee for attendance in some courses. Other courses were free to the public. Counseling and guidance services were not offered as extensively as in the public day and evening schools. Length of courses varied from three to fifteen weeks with no compulsory attendance. Certificates for completion of a course were not awarded in any of the center programs investigated.

As indicated in the literature, a consensus of opinion of out-of-school youths and adults about industrial arts offerings in the community centers is well expressed in the words of Alfred North Whitehead (61, p. 83).

If you want to understand anything, make it yourself, is a sound rule. Your faculties will be alive, your thoughts gain vividness by an immediate translation into acts. Your ideas gain that reality which comes from seeing the limits of their application.

Much has been written and said about the disintegration of the home, the monopolizing of recreation by commercialized amusement, and the loss of skills of handicraft. Conclusive evidence was found in this investigation that industrial arts courses in community centers help people find new
interests at home, and that they develop skills which the participants can use in keeping themselves constructively occupied and in contributing to a happier, richer home life.

Harold Bryan and Ralph Wenrich (12, p. 258) say that:

The type of organization and the kinds of activities included in the industrial arts program in any community center should bear some relationship to the industrial nature of the community, and the avocational interests of out-of-school youth and adults in the community; the size of the center, the organizational pattern, . . . and the experiences that participants have had are other factors to be considered in planning a community center.

Industrial Arts, in the fifty-five community centers studied, provided experiences in a variety of activities such as drawing, woodwork, electricity, graphic arts, and metal work. Adults could select their first and second choices. Brochures, pamphlets, and advertisements list the courses named below:

<table>
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<tr>
<th>Practical Electronics</th>
<th>Amateur Photography</th>
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<td>Radio Workshop</td>
<td>Machine Shop</td>
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<td>Arts and Crafts</td>
<td>Driver Training</td>
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<td>Fix-it Yourself</td>
<td>Ceramics</td>
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<td>Leather-tooling</td>
<td>Auto Mechanics</td>
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<td>Furniture Refinishing</td>
<td>Auto Electrics</td>
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<td>Auto-tune-up</td>
<td>Automatic Transmission</td>
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<tr>
<td>Mechanical Drafting</td>
<td>Technical Illustration</td>
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<tr>
<td>Electric Wiring Theory</td>
<td>Advanced Photography</td>
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Summary. Follow-up studies conducted by advisory councils and staff personnel of the community centers studied listed the following outcomes realized by their adult students:

1. Improvement in safety practices and habits.
2. Changes in interests regarding occupations.
3. Wiser use of leisure time.
4. Increase of "do-it-yourself" activities.
5. Increase of requests for additional courses.
6. Awareness of latent abilities.
7. Awareness of job opportunities in other fields than the person's occupation.
8. Deeper appreciation of present values.
9. Broader knowledge of the changes made in materials to meet the needs of society, of tools and processes used to effect these changes, of constant adaptation of materials, tools, and processes to meet changing needs and conditions, and of workers and working conditions.

10. Increase in ability to plan projects, to select and use sources of information, to handle tools and materials, to express with material things of individual interests, to work as a member of the group, and to evaluate work and its products.

Industrial arts for adults in community centers throughout the United States is centered around significant aspects of the manufacturing and construction industries. Participants in these programs learn about materials through actual experience in planning, producing, and repairing various types of consumer goods. They learn facts, principles and procedures about tools, materials, processes, mechanics, and design. They learn about woods, metals, plastics, leather, ceramics, textiles, paper, and other materials in industry. They learn about electricity, radio, television, motors, and a host of other items of importance, interest, and concern to all people at home, at work, and in recreation.

THE MOTT FOUNDATION PROGRAM

This program was begun in Flint, Michigan in 1935. It is a program of community improvement and cooperates with the Board of Education. The Foundation acts as pioneer for the Board of Education in trying out programs and
services for which public funds are not available. The Mott Program is a "fund" which the board can use for experimental or pilot-type projects and supplementary educational, recreational, and cultural programs for youths and adults.

The Mott Program does not affect the programs of other community agencies. Its purpose is not to displace nor to complete, but to supplement. The net effect has been to increase and stimulate the effectiveness of other agencies. The Board of Education appoints a Mott Foundation Coordinating Committee, composed of representatives from the board and from the community at large. This committee considers proposed budgets and plans for old and new projects. Those which are recommended are submitted to the Board for review. When projects are finally approved, an annual budget request is made to the Foundation. Upon their authorization, the necessary funds are sent to the Board. The original budget in 1935 was $6,000. The program has expanded so rapidly that the budget today is almost a million dollars. The funds, which are earmarked from the foundation, are disbursed in the same manner as all others available to the board.

The Mott Foundation program is a "grass roots" or long range program of community improvement. Howard
McClusky (79, p. 179) gives the purpose of the program in his article "Flint Community School Concept as I See It";

It attempts: (1) to make possible the maximum utilization of school buildings and school facilities, as well as other community resources --personal, material, and organizational; (2) to act as a pilot project to try out and to demonstrate to the Board of Education and to other communities the possibilities of what may be accomplished; and (3) to demonstrate what can be done to stimulate constructive influences not only in this community, but eventually in other parts of the state, nation, and world.

The Mott Foundation program is committed to the fundamental philosophy of investing its financial resources, not in additional buildings, but in the individual, by expanding and improving family recreational and educational services and opportunities for the entire community. A pamphlet by the Community School Committee (80, p. 3) states that:

Through cooperative effort and a better understanding of the problems of family and community living, it is hoped that Flint may become an increasingly better place to live.

The Trustees of the foundation selected the Board of Education as a medium of operation because school buildings were strategically located to serve all areas of the community. The next move was to institute the services for the people.

Large numbers of volunteers assist in the program. The number of paid workers fluctuates considerably according to the time of the year and to the other variations of programs and needs. Since it is a Board of Education
program, many public school teachers are employed. Carefully selected leaders from practically every profession and interest are represented on the staff. These include housewives, tailors, psychologists, store owners, doctors, lawyers, artists, salesmen, furriers, chemists, librarians, ministers, radio technicians, interior decorators, retired people, home economists, clerks, stenographers, and industrial workers.

Myrtle Black (68, p. 5), in her annual report to the trustees, cited aspects of the program which she outlined in an address before the Michigan Association of School Administrators:

The Mott Foundation Program . . . has touched almost every home in the city. It serves . . . young and old from pre-schoolers to adults. Participants represent all the community's social, economic, and cultural levels. A common hobby, for example, is a bond which permeates all mores. Another example is the program of in-service training in child growth and development, which has enrolled about half the teachers in the Flint School system.

Investigation of the Mott Foundation program revealed how and why certain projects were selected as against others. Some criteria for the selection of projects include:

1. How great is the need?
2. Is any other agency prepared to fill this need?
3. Can the interest and support of individuals and agencies be enlisted?
4. Is the suggested program educationally sound?
The divisions of the Mott Foundation program of the Flint Board of Education are as follows:

**Mott Camp.** One of the first divisions of the Foundation, Mott Camp, is a fresh air "outpost" for Flint School children. Located twenty miles from Flint on Pero Lake, it lends itself to a variety of uses: two-week camping experiences for 540 days, a special summer program for handicapped children, a practice ground for high school bands, a meeting place for school staff conferences, and winter recreation for the Flint Youth Bureau and other groups.

**School-Community Health and Safety.** This is a cooperative program which seeks to reach the most children with the most services. It helps to supplement, reactivate, and coordinate the activities of various community and county health agencies and interest groups.

**Cooperative Community Recreation Program.** This is designed to give everyone an opportunity to take part in forms of competitive athletics, summer activities, social recreation, dancing, adult leisure time classes, and swimming.

**The Stepping Stone Program.** This is for girls and seeks to foster a foundation for future home life through valuable training in homemaking and the "good graces" as well as spiritual and moral guidance. Mothers participate in home counselors groups. Hamady House, a country estate
which was given to the Stepping Stone Program by Michael Hamady, serves as a laboratory for out-of-school activities.

The Flint Youth Bureau. This is an affiliate of the Big Brothers of America, Inc. It recruits and coordinates volunteer services of approximately 1,000 men and women and 240 service organizations to help reconstruct the lives of more than 1,200 fatherless boys of Flint.

The Mott Teen Club. This is for teen-agers and assumes special responsibility for providing direct experiences in expression through group activities. Thirty-one community schools provide junior and senior teen club organizations with facilities for recreation and social expression under competent leadership.

The Community School Program. One by one over the last several years, the schools of Flint have undergone a transition from conventional "school houses" to community schools. This has been accomplished by making the buildings adaptable to all kinds of community use, to an outstanding and flexible educational program for children, a gathering place for teen-agers, a center for adult clubs and classes, and a veritable "clearing house" for neighborhood ideas.

Flint Committee on Alcoholism. This deals with the problem by attempting to work toward realistic program of prevention and to rehabilitate the confirmed alcoholic through education.
Graduate Study and In-service Training. The Flint Graduate Training Center for community school leadership was organized in 1954 by the Mott Foundation in conjunction with Eastern Michigan University. It was extended in 1957 by adding an advanced series of courses from Michigan State University. The Foundation's role is one of coordination and promotion. Instruction and administration are the responsibilities of the universities. The center and its program are an outgrowth of a need to supplement extension programs in Flint, with concentrated training in leadership, communications, and human relations. The program aims to prepare educational leaders to mobilize and use educational resources in the community, to release the creative potentialities of people up to their capacities and to give a new dimension to freedom.

All courses apply toward the master's degree, and each course carries two semester hours of credit. The fee is $13.50 per semester hour or $27.00 per course. To enroll for an Eastern Michigan University or Michigan State University course, the student must hold a bachelor's degree from an accredited institution or have completed at least 85 hours of undergraduate work. All registrations are made by mail. Registration materials and check or money order for the proper fee must be postmarked not later than midnight of the day following the second meeting of the class. In
no case will registration be accepted unless mailed within the limits noted above.

**Adult Education Program.** Because the adult division of the Mott Foundation Program was the only one that offered industrial arts, a special study was made of it.

**Adult High and Pre-High School Divisions.** These attract approximately 5,000 students annually. Classes are held in all standard high school courses. Three levels are provided in the pre-high school branch of the program. Level I covers instruction in reading, writing, spelling, language, and arithmetic, at first, second, and third grade levels. Level II covers grades four, five, and six. Level III covers grades seven and eight.

**Industrial Arts for Adults.** There are several major areas. In the community industrial arts program, the Electrical area provides such courses as fundamentals of electricity, AC and DC motors, electronics, television circuit trouble-shooting, radio construction, transistor theory and operation, radio trouble-shooting, high fidelity, national electrical code, and electrical mathematics.

The area of House Construction covers house planning, blueprint reading, and house construction. The Metal Fabrication area covers electrical arc welding, oxyacetylene and electric spot welding, sheet metal, machine tool lubrication, and machine shop practice. The Drafting area covers machine drawing, blueprint reading for machine workers,
blueprint reading for building construction, and technical sketching.

Courses are offered in "do-it-yourself" skills to assist adults in improving their homes, furniture, garages, cars, appliances, and machinery used in or about the home. Other courses are scheduled for both old and young in assisting them to use their leisure time creatively.

Examples of study groups offered in handicrafts and industrial arts:

<table>
<thead>
<tr>
<th>Craft</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawing and Sketching</td>
<td>Watercolor</td>
</tr>
<tr>
<td>Oil Painting</td>
<td>Portraiture</td>
</tr>
<tr>
<td>Contemporary Art</td>
<td>Family Art Workshops</td>
</tr>
<tr>
<td>Silk Screen Process</td>
<td>Commercial Art</td>
</tr>
<tr>
<td>Photography</td>
<td>Copper Enameling</td>
</tr>
<tr>
<td></td>
<td>Metals and Jewelry</td>
</tr>
<tr>
<td></td>
<td>Rocks and Minerals</td>
</tr>
<tr>
<td></td>
<td>Gems</td>
</tr>
<tr>
<td></td>
<td>China Painting</td>
</tr>
<tr>
<td>Lapidary</td>
<td>Leather Craft</td>
</tr>
<tr>
<td>Crafts for the Handicapped</td>
<td>Western Carving</td>
</tr>
<tr>
<td>Pottery and Sculpture</td>
<td>Florist Aids Training</td>
</tr>
<tr>
<td>Mosaics</td>
<td>Advanced Programs for the Talented</td>
</tr>
<tr>
<td>Picture Framing</td>
<td>Metal Enameling</td>
</tr>
<tr>
<td></td>
<td>Design in Crafts</td>
</tr>
<tr>
<td></td>
<td>Needlepoint</td>
</tr>
<tr>
<td></td>
<td>Weaving</td>
</tr>
<tr>
<td></td>
<td>Woodcarving</td>
</tr>
<tr>
<td></td>
<td>Lampshades</td>
</tr>
</tbody>
</table>
Interior Decorating  
Party Decorations and Favors  
Needlecraft  
Basketry  
Landscaping

Textile Painting  
Decorative Design  
Bookbinding  
Braided Rugs

Operational procedures employed in various divisions are as follows:

**Enrollment.** This is open to any adult regardless of age, residence, previous schooling or experience.

**Registration.** This is scheduled for all classes not listed under special registration. Non-limited class registration is permitted except for adult high school, pre-high school, business education, evening college and graduate training. Mail registration may be made for all non-limited classes. Students may use mail registration forms. If one wishes to take an adult education class, it is important that he indicate his interest early, because classes with low enrollments are withdrawn.

**Refunds.** These are in the form of cash or of a credit memo toward future registration, and can be made only before the second meeting of the class. Refunds are made upon presentation of a stamped receipt card.

**Special Service.** If requested, a bill-fold size certificate will be issued to each student completing a course successfully. An official notice of successful
completion of any course will be sent to the student's employer if requested.

Summary. The Mott Foundation Program is dedicated to the idea of active participation for all. The schools of Flint are the only single agency or common denominator capable of reaching every citizen. The schools differ from the traditional in the degree to which programs and services actually reflect the belief in community improvement.

CENTRAL STATE COLLEGE

The program for adults at Central State College in Wilberforce, Ohio provides instructional shop work in which general educational experiences are centered around the industrial and technical aspects of the community. The program offers orientation in the areas of appreciation, exploration, production, and recreation through actual experiences with them. Wholesome interests and abilities in creative and constructive work with tools and craft materials for leisure time activities are promoted in the creative workshop.

This workshop was begun at Central State College in September, 1954, as a part of the industrial arts department.

No specific requirements had to be met by those who wished to enroll. The program was organized and planned to cultivate community-college relationships and to foster
"do-it-yourself" activity. The college-community consisted of faculty and students, and residents of Cedarville, Yellow Springs, and Xenia, Ohio. Classes were held on Tuesday evenings from 7 to 9 in the laboratory of the industrial arts building on the Central State College campus.

Inasmuch as the creative workshop was organized as an activity of the industrial arts department of the college, financing the program was internal and incidental. The program grew from contributions and salvaged equipment from various departments and buildings of the college. Each person who enrolled was asked to pay a small fee for materials.

Enrollment and Staff. At the beginning of the creative workshop, a large number of people responded to the publicity campaign. Placards were printed and placed in strategic places on campus and in windows of heavily patronized business establishments in Xenia, Cedarville, and Yellow Springs. Church announcements, flyers, and word-of-mouth notices were made. Twenty-five adults were enrolled by October first of the academic year 1954-55. The director's report (37, p. 1) to the college president showed that these twenty-five students were still in regular attendance at the end of the year with sixty-two additional people as occasional participants, thereby making a total of eighty-seven people served by the workshop. The record shows that during the 1955-56 school year, the
workshop provided industrial arts classes for a total of thirty-four adults during the first semester and thirty during the second semester. In 1956-57, eighteen were in full attendance the first semester and twenty-eight the second semester. Nineteen students were enrolled the first semester of 1957-58 and twenty-seven attended full time during the second semester. The program served twenty-four adults the first semester of 1958-59 and thirty-one the second semester. A total of thirty-three persons enrolled and pursued industrial arts courses during 1959-60.

To teach and supervise the work of the students enrolled in the creative workshop at the beginning of the program were four regular faculty members and one volunteer who taught weaving. This staff of five people was adequate to handle the offerings in the workshop at the beginning. The program became so popular, however, that the staff had to be increased to include two additional teachers by the end of 1960.

Program and Services. One of the outstanding attributes of industrial arts for adults practiced in the creative workshop is provision for a dynamic learning situation. A major service of the creative workshop program was the guidance of the student in his selection of a project within the area being studied. The instructors guided the student and assisted him in the selection of a project commensurate with his abilities and within the limitations imposed by the
particular laboratory. The student was encouraged to reach a satisfactory solution through his own efforts in design, planning and construction.

The industrial arts offerings were consistent with institutional purposes and recognize the needs of different groups. The following schedule lists the types of courses and the subject matter areas of the creative workshop:

<table>
<thead>
<tr>
<th>Type of Shop Activity</th>
<th>Subject Matter Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crafts</td>
<td>Crafts—Leather, ceramics, art metal, plastics, or native materials and oil painting</td>
</tr>
<tr>
<td>Woodwork</td>
<td>Woodwork, craftwork, home mechanics, painting, and maintenance.</td>
</tr>
<tr>
<td>Metals</td>
<td>Metal work such as cold metal, sheet metal, enameling, and foundry.</td>
</tr>
<tr>
<td>Power Mechanics and Electricity</td>
<td>Power Mechanics, electronics, and electricity, operation of home equipment and small 2 and 4 stroke cycle engines.</td>
</tr>
<tr>
<td>Auto Mechanics</td>
<td>Automotive electricity, body repair and cooling systems.</td>
</tr>
<tr>
<td>Graphic Arts</td>
<td>Drawing, photography, silk screen, relief and hand press printing.</td>
</tr>
<tr>
<td>Sculpture and Carving</td>
<td>Planning and design, carving, clay, plastic and sculpturing materials</td>
</tr>
<tr>
<td>Weaving</td>
<td>Fundamentals in cloth and weaving processes.</td>
</tr>
</tbody>
</table>
Summary. As shown by evaluation and follow-up studies made of the students who attended the creative workshop at Central State College at Wilberforce, Ohio, the need for continuing education of adults is evident. A few of the advantages frequently referred to, by adults attending were: value of the offering, competence of faculty, convenience of time to attend, quality of project, and the appropriateness of the program. The offerings were needed and wanted. Even this partial list substantiates the fact that industrial arts and creative activity contain many constructive values.

Evaluation of the Central State College program for adults highlights the problem that extended adult education on many campuses is considered a peripheral and possibly expendable aspect of the college program. To offset this attitude, some evening colleges, universities and extension divisions are now making surveys and holding conferences in an effort to reappraise the program and objectives of the adult education.

The director of the Central State College creative workshop deemed the following factors appropriate for promotional purposes:

1. Describe the physical plant and facilities of the college.

2. Refer to the convenience of the location of the college.
3. Emphasize the excellence of the instructional staff.

4. Concentrate on the educational values of the offering.

5. Point out how the program fosters the vocational field.

6. Dwell upon the growing reputation of the program.

7. Show how better service to the public will result.

8. Emphasize the need for the program, indicate both material and spiritual gains which have resulted, and show testimonial letters from those who have attended.

Central State College is proud of its Creative Workshop, and invites any person to attend who is sincerely interested in "learning by doing." The enrollment is limited only by the available space.
CHAPTER V

ORGANIZATIONAL PROCEDURES AND PRACTICES

An investigation of research in the field of industrial arts education for adults revealed that no previous study had been written pertaining to the scope of this dissertation. Several studies related to the problem were discovered, but the findings did not specifically relate to industrial arts programs designed to promote higher standards of living for adults.

Several media were employed to locate industrial arts programs for adults planned to this end. A search through the literature revealed five sources. These were as follows:

1. Public schools in urban and rural areas
2. Community centers and settlement houses
3. Veterans Administration Hospitals and urban rehabilitation centers
4. Privately supported agencies
5. Institutions of higher education

Letters (see Appendix A) were written to the directors of these schools and agencies throughout the United States,

1. To discover what courses were offered, and
2. To request the names of persons who could supply information. The answers were sorted and analyzed. Then, two specifically designed questionnaires (see Appendix B and C) were sent to 465 correspondents.

Of the 325 respondents, thirty-one identified themselves as community center programs, twenty as day and evening school programs, twenty-one as rehabilitation programs for veterans and the handicapped, three as vocational agriculture, six as vocational trade, eleven as college sponsored programs for adults in adjoining communities, one program indicative of twenty-seven similar programs for adults in the city of Los Angeles, and three YMCA programs. Industrial arts programs for adults specifically designated as such were found in California, Florida, Michigan, Missouri, New York, Pennsylvania, Texas, and Washington, D.C.

The investigation further disclosed that such names as "hospital industry" and "physical medicine and rehabilitation" were used to indicate other types of programs for veterans and the handicapped. These were the only agencies out of 185 returns that specifically designated these different types of programs underway in their various localities. A number of respondents labeled their programs merely as adult education or general education providing industrial arts. It was the total enrollment figures reported that made it possible to obtain the industrial
arts program data needed for the study and to substantiate the contributions industrial arts is making to the movement.

The questionnaires to the directors of agencies were constructed with the aims of the study determining the selected items. Information was used as presented in The Questionnaire in Education by L. V. Koos (36, p. 69). Questions were asked pertaining to administration, organization, operation, curriculum, enrollment, financial support, committee organization, student organization, publicity, outcomes of course completion, policy determination, grades or certificate offered, and the like. This questionnaire is shown in Appendix B. Another questionnaire (Appendix C) was given by a selected number of teachers to adult class members. One hundred and forty questionnaires were sent for students to use in evening shop classes. Twenty-two of the total number were found to be from adults training in vocational fields and were discarded.

During the period of March 15 to May 25, 1961, a total of thirteen agencies and schools were visited. The visits revealed that in each agency and school, a comprehensive program of industrial arts courses was in operation. A total of thirty-eight staff members were interviewed and twenty-seven shop classes observed. An interview form (see Appendix D) was utilized to record data and to serve as an outline for interviews with program supervisors and instructors. In the construction of the interview form, the
book, *How to Interview* by Bingham and Moore (5, p. 16), provided information pertaining to interview techniques.

From the 185 questionnaires returned by the agencies, plus the 118 filled in by adult students, it was found that forty-seven industrial arts curriculums were being offered. The investigation shows that throughout the United States, California, Florida, Missouri, New York, and Ohio were the principal states offering programs of industrial arts with New York leading all the rest. Georgia, Kentucky, Mississippi, North and South Carolina, Alabama, and Louisiana indicated that very little, if any, provisions were made for industrial arts activity for adults. Respondents in Delaware, Illinois, Pennsylvania, New Mexico and Texas stated that a lack of interest on the part of teachers trained in industrial arts accounted for the lack of any programs on the adult level. The Board of Education in Philadelphia stated that programs in industrial arts for adults had been tried in the city system and that these had not expanded more rapidly because of their inability to achieve staff interest.

The purpose of this chapter is to present the findings of the study, showing the scope and extent of various aspects of the design, organization, administration, operation, support, enrollment, and curriculum of industrial arts programs for adults throughout the United States. To do this, data were collected from the two questionnaires
distributed to 465 correspondents. This chapter consists of information resulting from interviews, from analysis of 185 of the 325 questionnaires returned by the directors of these programs for adults in Northeastern, Midwestern, Southern and Western States and the District of Columbia, and from 118 of the 140 questionnaires returned by students enrolled in industrial arts activities. This information is shown in Tables 1 and 31 (see Table 1).

**TABLE 1**

**QUESTIONNAIRES RETURNED BY DIRECTORS**

<table>
<thead>
<tr>
<th>Geographic Areas</th>
<th>Questionnaires Submitted</th>
<th>Questionnaires Returned</th>
<th>Percent of Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeastern</td>
<td>63</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td>Midwestern</td>
<td>130</td>
<td>97</td>
<td>75</td>
</tr>
<tr>
<td>Southern</td>
<td>59</td>
<td>26</td>
<td>44</td>
</tr>
<tr>
<td>Western</td>
<td>62</td>
<td>29</td>
<td>47</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>11</td>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

325 185 57

The questionnaires used for this study were designed to obtain the following information:

**Needs and Wants of Individuals and Groups.**

1. What determines what adults want from schools and agencies conducting education programs?

2. Can educators help develop adult wants so allied to high priority adult needs?
3. What are predominant interests and skills of adults?

4. Is there a framework of adult education that identifies some agencies more closely with adult needs than others?

5. Are agencies and evening schools concerned with vital adult needs?

6. Do adults feel that their needs are being met in these schools and agencies?

Plans and Purposes of the Adult Education Agency

1. Is the school or agency program directed toward meeting general or specific needs?

2. What is the role of the agency in determining objectives?

3. What is the relationship between community goals and adults goals?

4. How extensive were industrial arts offerings?

Resources of Adult Education and the Community

1. How does the center provide learning resources?

2. What does the center do to establish itself as an integral part of the community life?

3. What are the ways these schools and agencies use in surveying community interest and resources?

4. What do these centers do to advertise or promote their programs?
Operations of the Adult Education Agency

1. How different are the administrative structures?
2. To what extent are the operations coordinated?
3. How are adult education centers supported?
4. What curriculums are offered?

The next section contains the data and interpretation of the findings derived from information on each of the items listed in the questionnaire (Appendix B).

ANALYSIS OF QUESTIONNAIRE DATA

Types of Adult Programs Supervised. The 244 programs conducted by the agencies responding, indicate the extent of offerings for adults. Only three respondents failed to specify that an adult program was in operation.

Table 2 shows that public evening schools in urban areas operated more adult education programs than any other agency reporting. Directors of these evening schools reported 125 programs for adults out of the 185 returns investigated. The thirty-one programs conducted by Veterans Rehabilitation Centers were the next highest number of adult programs to the public evening schools. Community centers in eighteen cities of 100,000 population reported twenty-seven adult programs. In these cities, settlement houses sponsored twelve adult programs. Seventeen public day school programs provided for young adults.
TABLE 2

TYPE OF ADULT EDUCATION PROGRAMS SUPERVISED

<table>
<thead>
<tr>
<th>Types of Adult Programs</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening Schools</td>
<td>125</td>
<td>51</td>
</tr>
<tr>
<td>Veterans Rehabilitation Centers</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>Community Centers</td>
<td>27</td>
<td>11</td>
</tr>
<tr>
<td>Public Day Schools</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Settlement Houses</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Other Agencies</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Colleges or Universities</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Private Enterprises</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Rural Agencies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No Replies</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>244</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

Eleven agencies such as the Bureau of Indian Affairs, Young Men's Hebrew Association, Young Women's Hebrew Association, Young Men's Christian Association, Young Women's Christian Association, Adult Recreation Centers in four factories, and two day-time Practical Nursing Centers each reported an adult program.

The community groups and colleges reported nine adult programs respectively. Table 2 reveals that some respondents checked more than one type of program supervised.

**Age Limits of Enrollment.** The replies to this item, as shown in Table 3 indicate that age limits for the adult programs or courses are not of great importance. Fifty-three of 185 respondents did not consider the age limitation factor important enough to specify. Another 102 stated they had no age limits.
TABLE 3

AGE LIMITS OF ENROLLMENT IN ADULT EDUCATION PROGRAMS

<table>
<thead>
<tr>
<th>Age Limits</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Limit</td>
<td>102</td>
<td>55</td>
</tr>
<tr>
<td>18 to 24</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>45 and Over</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>25 to 34</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>35 to 44</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>No Reply</td>
<td>53</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

Main Objectives of Program. The replies on the returned questionnaire indicate that no single objective can be associated with the adult program. A course or program may be initiated with specific objectives in mind; however, others, not planned, will also be met. Consumer education, better home living, and self-realization and initiative, having been checked on more than 50 percent of the returns, were the most highly rated. Although rural life education received a low rating on this particular questionnaire, it would be an important objective in rural adult education programs. It is clear that college service to the community with specialized programs for adults not enrolled in day classes will hardly be the only objective of any one course or program. While this objective is an important one, the
course must offer those vicarious learning experiences and goals desired and needed by the adults involved.

Of the 965 different types of objectives listed by the agencies reporting, interest in industry, health and safety, orderly performance, drawing and design, and shop skills constitute the highest frequency in industrial arts courses. Table 4 under "Other," as indicated by the large number of diverse objectives listed on the questionnaire, shows sixty-two. These included training to improve the neighborhood, educating foreign born for naturalization and effective citizenship, developing citizenship responsibilities, training for vocational betterment, training for rehabilitation and better living standards, forming new friendships, maintaining contacts with the community, making life more interesting and vital for those over sixty, providing recreational opportunities, upgrading industrial employees through related training, motivating useful living through home workshop or "do-it-yourself" activities.

It is interesting to note that developing self-realization and initiative, expanding cooperative attitudes, and encouraging interest in achievement as objectives were reported by all 185 respondents as objectives of their respective programs. Table 4 reflects that the agencies responding checked more than one main objective of their adult programs.
TABLE 4  

SAMPLING OF MAIN OBJECTIVES REPORTED

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Education</td>
<td>155</td>
<td>84</td>
</tr>
<tr>
<td>Better Home Living</td>
<td>106</td>
<td>57</td>
</tr>
<tr>
<td>Self-realization and Initiative</td>
<td>95</td>
<td>51</td>
</tr>
<tr>
<td>Shop Skills and Design</td>
<td>79</td>
<td>43</td>
</tr>
<tr>
<td>Appreciation and Use</td>
<td>79</td>
<td>43</td>
</tr>
<tr>
<td>Interest in Industry</td>
<td>70</td>
<td>48</td>
</tr>
<tr>
<td>Interest in Achievement</td>
<td>67</td>
<td>36</td>
</tr>
<tr>
<td>Other Objectives</td>
<td>62</td>
<td>34</td>
</tr>
<tr>
<td>Drawing and Design</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>Combining Vocational and Liberal Arts</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td>Cooperative Attitudes</td>
<td>47</td>
<td>25</td>
</tr>
<tr>
<td>Health and Safety</td>
<td>44</td>
<td>24</td>
</tr>
<tr>
<td>Orderly Performance</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>College Service to the Community</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Rural Life Education</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Dates which Programs Were Established. The chronological listing of the various years adult education programs were established in both rural and urban areas through the United States reveals some interesting facts. It was not until 1930 that the movement showed evidence of the expansion to come. Historical accounts of the growth of adult education by the Adult Education Association attributes this change in training adults for better living to the Works Projects Administration of the Roosevelt Administration. At that time, emphasis was not only placed upon survival but upon the happiness and further development of the individual.
Table 5 reveals 1941 to 1950 as the greatest period in which adult centers were founded. Fifty-six agencies or schools were organized. The next period showing growth was during the next ten years following when forty-three of adult centers were launched. Out of 185 respondents, only one reported that he started operations in 1961. This cannot be accurate because the table shows that thirty-three of the returns failed to specify the date of beginning.

**TABLE 5**

**CHRONOLOGICAL LISTING OF THE ESTABLISHMENT OF PROGRAMS**

<table>
<thead>
<tr>
<th>Date</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850 to 1899</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>1900 to 1910</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1911 to 1920</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>1921 to 1930</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>1931 to 1940</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>1941 to 1950</td>
<td>56</td>
<td>30</td>
</tr>
<tr>
<td>1951 to 1960</td>
<td>43</td>
<td>23</td>
</tr>
<tr>
<td>1961</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Every fall</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Uncertain</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Did not Reply</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 6 does not represent the total number of major steps used by schools and agencies in organizing adult programs. The table does reflect the steps used at one time or another in the four major types of schools and agencies reported. These are as follows:

1. Public day and evening schools
2. Community centers or settlement houses
3. Rehabilitation centers
4. Colleges or universities

**TABLE 6**

**MAJOR STEPS USED IN ORGANIZING PROGRAMS**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interests Expressed by Community</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>Advisory Committee Survey and Action</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Continuing Publicity</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>Board of Education</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Long-range Development</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Registration of Applicants</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Fields of Interest</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Industry and Business Needs</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>State Department</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Federal Provisions for Veterans</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Community Recreation Board</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>&quot;Do-it-Yourself&quot; Projects</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>185</td>
<td>99</td>
</tr>
</tbody>
</table>

The questionnaires indicated that besides the steps taken by the agencies listed, many other moves were made. Cooperation with trade unions, evening school curriculum committee recommendations, available budgets, word-of-mouth campaigns, volunteer recruitment, the junior college movement, parent teacher association suggestions, vocational leadership activity outcomes, interest in the severely disabled, safety campaigns, and other forces and activities played major roles.

Adult programs had to begin somewhere and were sponsored either by a school or community group. Table 6 shows
that twenty-seven of these programs were the outgrowth of interests expressed by people, while four agencies stated that in addition to other adult education services demanded, adults requested "do-it-yourself" courses. In between these two extremes are listed other prevalent steps employed in the initiation of adult programs from 1850 to the present.

Sources of Financial Support. Four hundred nine sources of support, as indicated by Table 7 were reported. These represented eleven different types of financial income for the maintenance of adult education programs. Student fees and tuition were charged by state and city agencies as secondary to the support provided by taxes. Ninety-six agencies out of 185 returns, collected student fees. Tuition was paid in forty-five schools. State and city or local institutions financing programs for adult education indicated the same source of support through allocations from special funds for this purpose. Eighty-three showed that state agencies supported their programs by earmarked funds. City and local governments totaled eighty-five returns, that financed their programs the same as the state governments. The federal government represented by sixty-three supported adult education programs.

Gifts, special annuities, and endowments as well as student fees supplemented the financial needs of the five institutional and fourteen private agencies reporting.
These nineteen agencies out of the 185 returns, as well as state, city or local, and federal agencies reported no investments as a source of financial support.

**TABLE 7**

**SUPPORT OF PROGRAMS BY PUBLIC, PRIVATE, PHILANTHROPIC, OR INSTITUTIONAL FEES**

<table>
<thead>
<tr>
<th>Source of Support</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Fees</td>
<td>96</td>
<td>52</td>
</tr>
<tr>
<td>City or Local Governments</td>
<td>85</td>
<td>46</td>
</tr>
<tr>
<td>State Governments</td>
<td>83</td>
<td>45</td>
</tr>
<tr>
<td>Federal Government</td>
<td>63</td>
<td>34</td>
</tr>
<tr>
<td>Tuition</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>Private Institutions</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Gifts</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Other Institutions</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Endowments</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Special Annuities</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Investments</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Status of Buildings, Equipment, and Supplies.** Adequate building space, equipment, and supplies are three main essentials contributive to the success of an adult education program. This is reflected in Table 7. While 42 of the 185 replies rated the status of the agencies' building, equipment, and supplies as inadequate or in need of improvement, it could seem that those who plan and conduct adult education programs should be willing to provide ample facilities. Adequate ratings were returned by 107 of the 185 programs while 32 agencies rated their facilities more than adequate. It can be assumed that these agencies were
well supported financially (Table 9) and employed full-time staff personnel, operating on a budgetary allocation of $25,000 or more.

**TABLE 8**

<table>
<thead>
<tr>
<th>Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>107</td>
<td>58</td>
</tr>
<tr>
<td>Satisfactory, but in Need</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>of Improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than Adequate</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>Inadequate</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>No Reply</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

**Budget Allocations.** The amount of money allocated for adult educational programs throughout the United States will depend upon the number participating, the demand, the size, and the scope of the program. Table 9 shows the ranges of money appropriated for the programs included in this study. However, no attempt was made to correlate these budget ranges with the four criteria listed above.

It is clearly evident from the table that the largest number of adult programs are financed by budgetary allocations of less than $5,000 and twenty operate on an annual budget of $100,000 or more. The questionnaire revealed that those agencies maintaining programs with budgets up to
$5,000 included community centers, settlement houses, and private institutions. Public schools and state agencies provided funds ranging from $10,000 upwards to $100,000. The federal government and selected private institutions allocated $100,000 or more for the support of their programs.

**TABLE 9**

**BUDGET APPROPRIATIONS**

<table>
<thead>
<tr>
<th>Budget Appropriations</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $500</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>$500 to $5,000</td>
<td>43</td>
<td>23</td>
</tr>
<tr>
<td>$5,000 to $10,000</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>$10,000 to $25,000</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>$25,000 to $50,000</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>$50,000 to $100,000</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>$100,000 or more</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>No Reply</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

Of the 185 respondents, thirty-six did not indicate from what source their financial support was derived.

*Factors Contributing to Development of Programs.* Agencies and schools reporting on this item utilized a number of similar ways and means in developing their programs. Many of the factors contributing to their success as shown by sixty of the returns listed on Table 10, involved cooperative effort on the part of school, community, industry,
newspapers, foundations, groups and persons. While nineteen of the respondents did not specify what factors contributed to the success of their programs, it can be assumed that they benefited from many of the sources of aid listed.

TABLE 10
FACTORS CONTRIBUTING TO DEVELOPMENT OF PROGRAMS

<table>
<thead>
<tr>
<th>Factors</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varied</td>
<td>60</td>
<td>32</td>
</tr>
<tr>
<td>No Comment</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Volunteer Service</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Gifts</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Local Community Interest</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Local Participation</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Board of Education</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Teaching Staff</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Federal Government</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Industrial Support</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Newspaper and other Promotional Projects</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Gifts and volunteer services headed the list as evidenced by thirty-six returns. Local participation by individuals and sponsorship by Boards of Education rated high in the development of programs in the areas reported.

It can be seen from Table 10 that the range of organizations and persons involved is wide and that the total activities encompassed are of tremendous size. The survey
does reveal other basic needs in future development of adult programs. These are:

1. To create greater public awareness of the role and importance of adult education.

2. To encourage the development of a large core of highly competent adult education practitioners and supporters, both professional and volunteer, and to develop more centers for adult learning.

3. To extend knowledge about the theory, methods, and organization, of adult education.

The leadership from the following organizations should be involved in attempting to reach the anticipated outcomes:

1. Professional organizations.

2. Voluntary organizations.


5. Federal government organizations.

6. Adult education councils and associations.

8. Industries and businesses engaged in training.

Problems to be Resolved. Because adults do not have to go to schools and agencies for further training, but undertake courses voluntarily, programs must be based on needs and interests which these students express or which they can be led to recognize. The latter clause is
significant, for adult educators almost universally have purposes which go far beyond the offering of courses which the questionnaire indicated would be or were popular. These goals were involved in helping adults become more effective citizens and at the same time in keeping them interested in the programs.

Table 11 shows that the greatest problems as reported by thirty-five schools and agencies are securing and training qualified personnel and equalizing teaching load. Many volunteers were not adequately trained to handle classes. Their services were frequently used to assist regular classroom teachers.

TABLE 11
PROBLEMS TO BE RESOLVED IN ORGANIZING PROGRAMS

<table>
<thead>
<tr>
<th>Problems</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securing, Training Qualified Personnel</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Providing a Suitable Curriculum</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Obtaining Adequate Finances</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>No Reply</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Space, Equipment, and Supplies</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Public Relations</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Maintaining Enrollments</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Other Problems</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
While a valid principle of program development is to reach adults where they are, an imaginative educator must offer courses which enable adults to grow in the breadth and depth. Such a curriculum is not always easy. Twenty-eight of the respondents list a suitable curriculum as next highest to securing qualified personnel.

To understand the other types of problems that Table 11 reflects, programs planners are forced to cover much ground in providing ample building, equipment, and supplies as well as promotional advertising to keep the program alive. If an activity has clear and immediate relevance to a participants' interests, it will attract and hold him. Staff and other instructional personnel as well as a building sufficient to house a good program are parts of a successful adult education activity.

Employment Service of the Director. The number of adult education program agencies shown by Table 12 indicate that out of 185 agencies reporting 99 employ directors full time. Sixty-two have part-time directors. Several directors serve in two positions.

The questionnaire also revealed that twenty-four of the replies indicated that the director taught classes in addition to his supervisory duties.
TABLE 12

EMPLOYMENT OF THE DIRECTOR

<table>
<thead>
<tr>
<th>Service of Director</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time</td>
<td>99</td>
<td>53</td>
</tr>
<tr>
<td>Part Time</td>
<td>62</td>
<td>34</td>
</tr>
<tr>
<td>Teaches Classes</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

Areas and Agencies As Chief Sources of Students.
Replies to this entry, as indicated by Table 13, listed 149 programs, that draw students for the courses, workshops, and other activities from the community in which the agency or school is located. Thirty-three agencies report the local school system to be their main source of students.

TABLE 13

SOURCES OF STUDENTS ENROLLED

<table>
<thead>
<tr>
<th>Sources</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>149</td>
<td>80</td>
</tr>
<tr>
<td>School System</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>College</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>8</td>
</tr>
</tbody>
</table>

The questionnaire also indicated that fourteen of the 185 adult programs reporting enrolled students from other sources. Among these sources were students from other communities who paid special fees, veterans recently
discharged from the armed forces, students attending special workshops, hospitalized veterans from other communities, students from industries and factories, housing project students and those from churches, recreation centers, and libraries in adjacent communities.

**Buildings and Schools Used to House Programs.** The type of program offered will determine the type of housing required. The location of the program may also depend upon the convenience of the students.

Public school buildings served the bulk or 120 of the programs. Table 14 also shows that Community Center buildings and settlement houses ranked second in supplying space.

**TABLE 14**

**BUILDINGS AND SCHOOLS HOUSING PROGRAMS**

<table>
<thead>
<tr>
<th>Housing of Programs</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public School System</td>
<td>121</td>
<td>65</td>
</tr>
<tr>
<td>Community Center</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>Agency Property</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Owned or Leased by Federal Government</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>College or University</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Not Listed</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Private</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>
Thirty-one of these buildings were utilized. Twenty-three of the 185 returns conducted programs in their own buildings. The federal government in rehabilitation centers and other branches of adult education listed twenty-one agencies. Fourteen colleges provided building space. Thirteen houses, private buildings, and other facilities were listed.

Staff Committees Conducting Programs. No schools or agency could operate without the cooperative planning effort of its staff and faculty, volunteer or paid workers, and advisory committees. Table 15 shows forty-three of the respondents not indicating the use of committees. Of this group, however, fifteen reported faculty committees to be in existence.

**TABLE 15**

**REGULAR STAFF COMMITTEES**

<table>
<thead>
<tr>
<th>Committees</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff and In-Service</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>Research, Safety, and Legislative</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>Adult Advisory and Community</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Curriculum and Program</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Publicity, Promotion, and Public Relations</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Clinical Training and Rehabilitation Boards</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>No Response</td>
<td>43</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Thirty-nine indicated that the business of program development, curriculum change, discussion of enrollments, publicity, and plant needs was conducted by the instructional staff led by the director of the agency or school. Improvement of instruction and the in-service training were planned by the in-service committee.

Conducting surveys, analyzing census data, interviewing community leaders, polling organizations via "self-surveys," and employing other ways to find out as much as possible about their potential students so that their programs can be adapted, both in content and method, needs, abilities, and motivations, are projects carried on by research, legislative, and activities committees in thirty-three schools and agencies. Table 15 also shows wide participation of advisory committees. Other important committees are those concerned with curriculum and extracurricular program planning. The purposes frequently listed are:

1. To identify educational needs.
2. To develop new programs.
3. To publicize and promote programs.
4. To cooperate on joint projects.
5. To coordinate adult education activities.
6. To act as a clearing-house.
7. To interpret trends.
8. To promote interest and legislation support.
9. To represent the adult education movements.
10. To provide valid experiences for adults.

**Methods Used for Orientation of Staff.** The returns gave evidence of the large number of people who earn part or all of their compensation by teaching adults. School teachers, librarians, group workers, health educators, personnel directors, labor union officials, and full-time trained experts in adult education are drawn into this type of activity.

The need for some kind of systematic pre-service and in-service training becomes apparent. Table 16 reveals that 133 agencies out of the 185 returns reported the practice of orienting staff members by individual conference. Periodic staff conferences, comparable in many ways to a faculty meeting, but by no means the same in organization and operation, were reported by 100 agencies.

Predominantly, the public schools, state and federal agencies, and 8 percent of the private agencies, totaling forty-eight, required their staffs to receive formal instruction. They employed discussion groups, staff bulletins, institutes, conferences following visitation, and workshops.
TABLE 16

TYPES OF STAFF ORIENTATION TRAINING

<table>
<thead>
<tr>
<th>Types</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Conferences</td>
<td>133</td>
<td>72</td>
</tr>
<tr>
<td>Periodic Staff Conferences</td>
<td>100</td>
<td>54</td>
</tr>
<tr>
<td>Staff Bulletins</td>
<td>83</td>
<td>45</td>
</tr>
<tr>
<td>Discussion Groups</td>
<td>64</td>
<td>35</td>
</tr>
<tr>
<td>Workshops</td>
<td>57</td>
<td>31</td>
</tr>
<tr>
<td>Formal Instruction</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Responsibility for Policy. Adult education in schools, in business and industry and in community agencies is conducted and governed by established policies and regulations. The questionnaire revealed this, yet any attempt to list these policies and regulations would be of little value because of many variables. In 136 returns from 111 public day and evening schools and 25 private agencies, regulations and policies were established the school board, board of directors, or trustees.

As recorded in Table 17 departmental chairmen in some schools and agencies, supervisors in recreational divisions, government liaison personnel, private citizens and sponsors of programs determine regulations and policies. In many cases, especially in the case of departmental chairman and
government liaison personnel, these supervisors initiate and administer, regulations and policies made by a higher authority.

**TABLE 17**

**RESPONSIBILITY FOR DETERMINATION POLICIES**

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Board</td>
<td>111</td>
<td>60</td>
</tr>
<tr>
<td>Sponsors of Program</td>
<td>25</td>
<td>14</td>
</tr>
<tr>
<td>Board of Directors</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Department Chairman</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Government Liaison</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Recreation Board</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Private Citizens</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Trustees</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Significant Areas of Operation.** Today's independent adult school compares well with American industry's "free enterprise." Such a school usually arises from urban, suburban, or rural need, is "sparked" by a few civic leaders.

Replies from 185 returns reveal that the largest centers are located in urban areas with a population of 100,000 or more. It is interesting to note in Table 18 that in the suburbs of the same cities, 35 programs were in operation. Six respondents did not specify in what particular area their programs were conducted.
TABLE 18

LOCATION OF INDUSTRIAL ARTS PROGRAMS

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>125</td>
<td>68</td>
</tr>
<tr>
<td>Suburban</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Rural</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>No Comment</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

Affiliated Organizations. Adult education in business and industry is an expanding area of activity. It is carried on in part by business and industrial organizations and in part by outside agencies or the public schools. Any attempt to define the magnitude of this activity is difficult because of the variety of organizations involved.

Table 19 lists fifty-four respondents that claim the support and cooperation of such organizations. Veterans organizations and service groups constitute a large segment of the support.

TABLE 19

AFFILIATED ORGANIZATIONS

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniop, Industry, P.T.A. Civic Groups</td>
<td>54</td>
<td>29</td>
</tr>
<tr>
<td>No Comment</td>
<td>47</td>
<td>25</td>
</tr>
<tr>
<td>City, State, and Federal</td>
<td>42</td>
<td>23</td>
</tr>
<tr>
<td>Veterans</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>
It is clear that business and industry cannot be expected to provide adult education centers for the masses of adults who seek such training.

State and Federal governments are opening more schools in the rehabilitation of veterans and in the training of specialized personnel. The role played by these is an important one, and it is evident that the adult education movement will experience continued growth.

**Use of Surveys to Determine Offerings.** The use of the survey is generally a mark of the initial development of a program from a chance activity to an area for systematic study and action. Surveys and other acceptable means employed in determining what the curriculum should be are useful for they provide a picture of the interests and needs of adults and describe the evolving form and pattern of adult education.

Replies from the questionnaire reflected the fact that the survey had to be supplemented by requests, educated guesses, and the advice of advisory committee to provide consistency.

Table 20 shows that 140 of the 185 returns, indicate that schools institute courses predominantly upon the request of students. Community polls and surveys of students were reported by 87 directors, instructors, and supervisors. Twenty-seven other means by which programs are
determined included medical prescriptions, proposals by social agencies, requests from industry and business, man-on-the-street ideas, and proposals from consultants or specialists.

**TABLE 20**

**USE OF EDUCATIONAL SURVEYS**

<table>
<thead>
<tr>
<th>Means</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td>140</td>
<td>76</td>
</tr>
<tr>
<td>Surveys</td>
<td>87</td>
<td>47</td>
</tr>
<tr>
<td>Students</td>
<td>82</td>
<td>44</td>
</tr>
<tr>
<td>Advisory Committees</td>
<td>74</td>
<td>40</td>
</tr>
<tr>
<td>Educated Guesses</td>
<td>67</td>
<td>36</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>15</td>
</tr>
</tbody>
</table>

**Mass Media, Publicity, and Advertising Techniques.**

There are 147 agencies that promote programs mainly through newspapers to twenty-eight other agencies which canvas by telephone.

Table 21 indicates that of the 185 respondents 123 found printed bulletins the best possible means of advertisement. Radio and television constituted half of the returns as also did letters and post cards.

Agencies are generally skeptical of advertising. Table 21 indicates that face-to-face promotion is most effective. The respondents identified recruitment by staff personnel in telling others about their programs, radio and
TV programs, open house exhibits, and telephone appeals as the best advertising media. This indicates they have more confidence in the spoken than in the written word. Promotion by literature and other forms of publicity got the next highest rating, while window displays rated third.

**TABLE 21**

**MEANS USED TO PROMOTE PROGRAMS**

<table>
<thead>
<tr>
<th>Media</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>147</td>
<td>79</td>
</tr>
<tr>
<td>Bulletins</td>
<td>123</td>
<td>66</td>
</tr>
<tr>
<td>Letters</td>
<td>92</td>
<td>50</td>
</tr>
<tr>
<td>Radio</td>
<td>89</td>
<td>48</td>
</tr>
<tr>
<td>Recruitment</td>
<td>76</td>
<td>41</td>
</tr>
<tr>
<td>Exhibits</td>
<td>68</td>
<td>37</td>
</tr>
<tr>
<td>Posters</td>
<td>68</td>
<td>37</td>
</tr>
<tr>
<td>Displays</td>
<td>38</td>
<td>21</td>
</tr>
<tr>
<td>Telephone</td>
<td>28</td>
<td>15</td>
</tr>
</tbody>
</table>

**Composition of Advisory Groups.** A successful program is possible when it has the backing, understanding, and steady support of the board of education, board of trustees, advisory committee, or group of interested citizens. An advisory committee making the decision to launch a program explores the needs of adults, the ends to be served, and the means to be employed. Advisory committees are persons, who,
by evidence or inference, are interested in education, alert to educational opportunities, and have shown an awareness of the need for knowledge.

Table 22 shows that advisory groups are sometimes composed of equal representation of professional and industrial leaders. Some of the people are included in committees serving thirty-nine agencies responding to this item. Nineteen others report that specialists, technicians, and practitioners are members of their advisory boards. Other committees consist of local community leaders, women's philanthropic organizational representatives, and heads of business establishments.

**TABLE 22**

**COMPOSITION OF ADVISORY GROUPS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional and Industrial</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td>No Response</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Community Organizations</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>Adults</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Specialists and Technicians</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

An advisory committee should not become involved in administration. That is the job of the director. It should devote itself to questions about which the director and
staff need advice, make investigations which the director cannot readily undertake, and perform tasks which a committee or individual members can do better than the director acting alone.

Important tasks of an advisory committee are:
1. Establish good relations.
2. Assist in educational surveys.

Types of Curricula. The first responsibility of the adult educator is to create learning opportunities. Advances in medical science are giving more people the opportunity to live into old age, and advances in technology are providing free time for possible enjoyment of added years. It is apparent that when programs are designed or changed that these factors are considered.

Since this study is concerned with an investigation of industrial arts for adults, the questionnaire requested such information. Table 23 indicates the response.

The 116 replies contained a corresponding check of recreational and leisure time pursuits including industrial arts courses. Course offerings in the trades and industries, numbering ninety-six of the replies, ran slightly higher than "do-it-yourself" projects. Other data on the questionnaire substantiated the fact that courses in trades and industries were vocational in nature while the "do-it-yourself" activities were avocational.
### TABLE 23

#### TYPES OF CURRICULA

<table>
<thead>
<tr>
<th>Curricula</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational</td>
<td>119</td>
<td>64</td>
</tr>
<tr>
<td>Industrial Arts</td>
<td>116</td>
<td>63</td>
</tr>
<tr>
<td>Trade and Industry</td>
<td>96</td>
<td>52</td>
</tr>
<tr>
<td>&quot;Do-It-Yourself&quot;</td>
<td>94</td>
<td>51</td>
</tr>
<tr>
<td>High School Subjects</td>
<td>88</td>
<td>48</td>
</tr>
<tr>
<td>Aesthetic Interests</td>
<td>81</td>
<td>44</td>
</tr>
<tr>
<td>Literacy</td>
<td>66</td>
<td>36</td>
</tr>
<tr>
<td>Technology</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>College Preparatory</td>
<td>44</td>
<td>24</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>42</td>
<td>23</td>
</tr>
</tbody>
</table>

Adults unable to read and write enrolled in literacy program. High school subjects were offered in eighty-eight schools. Forty-four of these schools indicated that students pursued college preparatory subjects. Forty-two of the returns showed that adults were engaged in rehabilitative and therapeutic activities. Aesthetic interests in handicrafts were reported by eighty-one agencies, while sixty-five reported adults taking courses in "technology." Table 24 also indicates that schools and agencies checked one or more courses selected by adults.

**Courses Most Frequently Selected.** The task of curriculum development then is a local responsibility. The principle of local autonomy has long been recognized but it has more than precedent to support it in adult education.
TABLE 24

COURSES MOST FREQUENTLY ELECTED

<table>
<thead>
<tr>
<th>Courses</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leading to Diploma</td>
<td>64</td>
<td>35</td>
</tr>
<tr>
<td>Industrial Arts</td>
<td>44</td>
<td>24</td>
</tr>
<tr>
<td>No Response</td>
<td>25</td>
<td>13</td>
</tr>
<tr>
<td>Automotives Machine Shop</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Ceramics, Oil Painting, and Art</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Electronics</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Welding</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Woodwork</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

As indicated by Table 24, the prime consideration in the planning of a curriculum in adult education is people--their needs, problems, and aspirations. The educational needs of people, however, cannot be generalized. They differ from case to case and community to community.

Sixty-four of the respondents stated that the majority of courses chosen were those leading to a high school diploma. Such courses as electronics, woodwork, welding, automotives, and machine shop training accounted for 22 percent of the total. It may be assumed that adults selected these courses because of their vocational value.

Courses in ceramics, oil painting, and other art projects were listed by twelve respondents, as being the
most popular. Adult education is concerned with the use of leisure time. Industrial arts is justified because it helps the adult to use his increasing leisure more constructively.

An essential characteristic of the curriculum is comprehensive coverage. This is one of the sustaining forces of a program and will be reflected in the requests for courses. The returns substantiate the fact that over-emphasis in one area and de-emphasis in another are equally undesirable. Thus adult education curriculum must be so planned that there is a logical and progressive pattern in which the adult can find opportunity for extended study in areas of learning important to him.

**Types of Student Organizations.** Explicit in the philosophy expounded by adult educators is a concern for the worth of the individual and what each is interested in by way of social development. They feel that this need cannot be fully met unless the individual relates in some way to his peers or associates engaged in the same pursuits. Therefore, respondents filling in this item on the questionnaire listed ten different yet similar types of organizations which students join. Table 25 shows that social clubs or committees, special projects, and student councils ranked high in the number of student organizations and in percentage of total replies. Moderate interest was shown by students in promotional, community-centered, foreign, and
program committees. The lowest interest was by those listing study groups, church and art clubs.

TABLE 25
STUDENT ORGANIZATIONS

<table>
<thead>
<tr>
<th>Types</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Response</td>
<td>59</td>
<td>32</td>
</tr>
<tr>
<td>Student Councils</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Special Projects</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Social Clubs</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Community Centered Clubs</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Program Committees</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Foreign Groups</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Promotion Groups</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Arts Clubs</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Study Groups</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Church Clubs</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Methods Employed in Organizing Adult Groups. Each program investigated showed that a diversified list of social, civic, and service clubs were organized as a means of supplementing class activity. Many of these organizations were formed through the initiative of students, while others were arranged by the agency. In many cases it was found that the organizations were organized by the administration, others by department heads. Seventy-two respondents of the 185, did not answer this item. Of the three other methods employed in organizing club groups shown on Table 26, students were able to select and initiate their own activities and clubs.
TABLE 26

METHODS EMPLOYED IN ORGANIZING

<table>
<thead>
<tr>
<th>Methods</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Response</td>
<td>72</td>
<td>39</td>
</tr>
<tr>
<td>Student Choice</td>
<td>54</td>
<td>29</td>
</tr>
<tr>
<td>Administrative Choice</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>Departmental Choice</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Many of the clubs and organizations which were started as an outgrowth of in-class projects in a large number of the agencies began originally as an extra-class activity. These groups are in the process of becoming more closely integrated with the offerings of various programs. The activities draw heavily upon the talents, abilities, and interests of the students and those of the instructor to extend the work beyond the scope of the courses. Other features of these organizations include the encouragement of adult participation in self-surveys and a combination of service, research, and instruction in programs aimed at raising standards of living.

Counseling Services and Techniques. What brings adult education to its highest expression and allows it to render its most significant service is careful attention to enriching the minds and spirits of individuals as individuals,
that they may be fine people and attain the higher satisfactions of living.

Table 27 shows that forty-nine schools and agencies out of 185, conduct extensive testing, offer individual orientation and counseling, and referral service after students have completed courses. Twenty-eight others sponsor group discussions, interviews, and clinics as a means of guiding and counseling adults. It was surprising to note that twenty-seven of these schools and agencies

<table>
<thead>
<tr>
<th>Counseling Services Employed</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varied Techniques</td>
<td>50</td>
<td>27</td>
</tr>
<tr>
<td>Testing and Referrals</td>
<td>49</td>
<td>26</td>
</tr>
<tr>
<td>No Response</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>Interviews and Clinics</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Use of Psychologist</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>185</td>
<td>100</td>
</tr>
</tbody>
</table>

TABLE 27
COUNSELING SERVICES AND TECHNIQUES

employ the services of psychologists in both testing and in counseling. Fifty organizations listed a wide variety of services and procedures including:

1. Limited personal counseling
2. Use of five trained counselors
3. Job opportunity service
4. Training coordinators
5. Counseling by director of adult center

6. Use of case or social workers

A program which includes effective counseling services together with manual and mental development of students inevitably leads to satisfactory living. Such a program contributes toward insuring that the quality of adults, the productiveness of their operations, and the value of their decisions is high as can be achieved by these means.

Types of Sponsored Projects. Effective public relations, and public interpretation help to make a sound adult education program and assure its force and significance. Prospective students must therefore be constantly advised what can be had if the demand is sufficient. After they are enrolled, such activities as exhibits, shows, demonstrations, open house, and celebrations must be staged to display their handiwork or their talents. Adult students must experience success and these activities provide the means.

Table 28 shows that skills exhibited at "open house" day, display of products made by students, shows, clinics, displays, visitor's nights, special days or weeks were reported as uppermost in the types of extra-class projects employed. Sixty-four of the 185 returns, listed the above projects, while forty-two reported exhibits, clinics, workshops, and lectures. Another seventeen reported that their students preferred field trips, outings, and in-school parties.
These results of the study support the value of an annual or semiannual occasion for such activities. It must be said, however, that where the "profit" is rather more intimately personal, as in the enlargement of knowledge or understanding, it is far more difficult to put on shows, exhibits or demonstrations. Yet as a public service, adult education requires intelligent public support and these are ways that produce it.

Types of Merits and Awards. Most of the schools and agencies offer a student various rewards for the successful completion of courses. The type of reward varies greatly. In many instances, the rating received provides an incentive for the student enrolling in the course or program. The returns from the questionnaire show that ninety-eight of the...
185 programs gave a certificate for satisfactory completion of a course. Table 29 also shows that eighty-eight awarded a diploma. An apprenticeship rating was granted by 46 of the 185 programs surveyed.

<table>
<thead>
<tr>
<th>Types of Award</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificates</td>
<td>98</td>
<td>53</td>
</tr>
<tr>
<td>Diplomas</td>
<td>88</td>
<td>48</td>
</tr>
<tr>
<td>Apprentice Ratings</td>
<td>46</td>
<td>24</td>
</tr>
<tr>
<td>Grades</td>
<td>37</td>
<td>20</td>
</tr>
<tr>
<td>Journeyman Ratings</td>
<td>25</td>
<td>14</td>
</tr>
</tbody>
</table>

The certificate was the most common award for industrial arts students completing a given course or project. Apprenticeship ratings and diplomas ranked second. Grades and journeyman ratings are shown by the survey to be the least common awards received. Day and evening schools issued both grades and diplomas while non-school agencies such as community centers, settlement houses, and church sponsored centers, issued certificates.

The survey also showed that grades were awarded by thirty-seven of this group while journeyman ratings were the end result given of twenty-five of the 185 programs.
Several programs issue more than one type of reward for completion of a course or project. Some programs require more than one or a series of courses, for a student to attain the rating desired. The kind of ratings or rewards are dominated, in some localities, by the course offering of the agency so this may be a limiting factor.

Follow-up Activities. Further training in order to take up a trade or to become more proficient in a trade, was checked on seventy-seven of the 185 replies. Ability to do home improvement work received 72 checks. A continuation of training received the same number of checks as the item calling for the ability to make home improvements. Table 30 reveals that a total of seventy programs checked the developing of finer recreational skills as a follow-up activity after the completion of adult industrial arts courses. Training for other occupations was indicated as a follow-up activity by sixty-seven programs. Fifty-four of the 185 listed the completion of high school as the reason for enrolling. Some individuals use these courses to meet college entrance requirements or to accelerate their college program. Also, attendance in a given course may cause a student to seek further information by enrolling in college.
TABLE 30
RESULTS OF FOLLOW-UP STUDIES

<table>
<thead>
<tr>
<th>Activities</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursue a Trade</td>
<td>77</td>
<td>42</td>
</tr>
<tr>
<td>Continue Training</td>
<td>72</td>
<td>39</td>
</tr>
<tr>
<td>&quot;Do-It-Yourself&quot; Projects</td>
<td>72</td>
<td>39</td>
</tr>
<tr>
<td>Develop Recreational Skills</td>
<td>70</td>
<td>38</td>
</tr>
<tr>
<td>Go into Other Jobs</td>
<td>67</td>
<td>36</td>
</tr>
<tr>
<td>Finish High School</td>
<td>54</td>
<td>29</td>
</tr>
<tr>
<td>Go to College</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Recover from Disability</td>
<td>37</td>
<td>20</td>
</tr>
</tbody>
</table>

Forty-eight of the 185 programs reveal that adults went on to college. Recovery from a disability or retraining in subsequent rehabilitation courses is another end result of some courses as indicated by thirty-seven of the 185 returns. The agencies were engaged specifically in training maimed veterans and crippled civilians enrolled in rehabilitation centers.

The pursuit of a trade was the most common activity. Also important incentives included desires to continue training either in additional industrial arts or college courses, improvement of homes, and development of finer
recreational skills. The questionnaire further revealed that the least common activities were:

1. Going into other jobs
2. Pursuing high school and college courses, and
3. Further rehabilitation and retraining

SUMMARY OF DATA FROM QUESTIONNAIRES

The survey indicates that industrial arts permits the building up of aspirations and that if it is viewed as education the individual is provided with a larger capacity for a creative relationship to his life and work.

Taxes, foundation grants, community chest participation, service fees and tuition, and grants from public, state, and federal institutions pay for adult education. School buildings and those owned by private agencies house adult education programs and lend subsistence. Enrollments are steady and the demand for more and diversified courses including "do-it-yourself" projects, is increasing. Mass media and other promotional efforts are utilized in an effective way in selling adult education to the general public.

The heart of the adult education enterprise in many communities is, for lack of other facilities, the local public school district. The public school has existing plant and personnel to teach and administer programs. It is an acceptable and inexpensive facility for all adults.
The public schools is able to provide leadership to other agencies for adults through a variety of partnerships with the agencies and interests of the average community.

The replies to the questionnaire reveal that all the types of activities specified by the Adult Education Association, are carried on in the schools and agencies. These include: academic education, programs for the aging and preparation for retirement, community development, industrial arts, creative arts, economic education, home and family life education, recreational and vocational education.

The presence of professionally-trained personnel has facilitated cooperative relationships with college and university sponsored adult education services to the extent that adult centers on a large scale are now operating on these campuses. Budget allocations and space have been made available for these programs specifically designed to serve the community. The concept of service on a degree or a non-degree basis is growing.

Results from the study lead to the belief that some realignment of views is needed on the historical issue over whether adult education should be focused on the meeting of individual needs or developed as an instrument of national policy. There is a need for a wider use of resources available to adult education agencies to improve the quality of decision-making and programming of curricula. The concept of adult education as an instrument of social evolution is
seen as a favorable sign. The survey clearly reveals that two out of every three respondents indicate a swing toward community and family improvement as the chief characteristic of the current movement.

ANALYSIS OF QUESTIONNAIRE DATA

A questionnaire was distributed to each student by the supervisor in order to determine why adults attend evening shop classes and to learn something of their individual status and their interest related to shop activities. This section consists of data analyzed from 118 questionnaires reported in Table 31.

TABLE 31

QUESTIONNAIRES SUBMITTED, USED AND DISCARDED

<table>
<thead>
<tr>
<th>Class</th>
<th>Submitted</th>
<th>Used</th>
<th>Discarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood and Metal</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Woodworking</td>
<td>11</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Cabinet Making</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Weaving</td>
<td>9 (women)</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Upholstering</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Wood, plastics, and Chair caning</td>
<td>12</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Radio and TV</td>
<td>20</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Home Mechanics</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Ceramics</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Jewelry</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Machine Shop</td>
<td>24</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Leatherwork</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>140</strong></td>
<td><strong>118</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>
Forty-six occupations were represented. R. O. Beckman's (67, p. 225) List of Representative Occupations in Each Grade of the Occupational Scale offered helpful information in determining the classification and placement of the occupations reported.

The majority of the adults were classified in the manual occupations. The number in the various occupations are as follows: Twenty-two persons were in skilled manual occupations; eighteen were in semi-skilled occupations; fourteen were housewives; eleven were professional; ten were in unskilled or manual occupations; ten were in business occupations; nine were in sub-professional occupations; four were in minor supervisory occupational three were in managerial and executive occupations; and one was retired. The occupational information involved is shown in Table 32.

The ages of adults enrolled in the evening shop classes polled showed a majority of 43 persons in the thirty to thirty-nine age group. The other age groups are: thirty-three persons in the age group of forty to forty-nine; twenty-one in the age group of twenty to twenty-nine and seven in the age group of sixty to sixty-nine. The age groups and percentage in each, are given in Table 33. In the twelve classes, 70 percent were men, 71 percent were married, and 48 percent had children in school.
### TABLE 32
#### OCCUPATIONS REPRESENTED BY REGIONS

<table>
<thead>
<tr>
<th>Regions</th>
<th>Occupations</th>
<th>Number in Occupation</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwestern</td>
<td>Skilled occupations</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Semi-skilled occupations</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Midwestern</td>
<td>Housewife</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Professional Occupations</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Southern</td>
<td>Skilled White Collar</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Unskilled Occupations</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Business Occupations</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Western</td>
<td>Professional Occupations</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Sub-professional occupations</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>Minor supervisory</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Managerial and executive</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Retired</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>118</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### TABLE 33
#### AGE GROUPS, NUMBER AND PERCENT IN EACH GROUP

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>30-39</td>
<td>43</td>
<td>36</td>
</tr>
<tr>
<td>40-49</td>
<td>33</td>
<td>28</td>
</tr>
<tr>
<td>50-59</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>60-69</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>118</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Students were requested to designate their primary reason for attending evening classes. Of the 118 adults, forty stated that they were attending to learn to use tools and materials. Thirty-two reported being there for recreation. Thirty-one were pursuing a chosen hobby. Technical and general shop information was sought by fourteen persons and only one person indicated that his reason for attending classes was social or to associate with others.

Those who specified that they wanted to learn to use tools were asked why a knowledge of tools and materials would be beneficial. A majority wanted to use tools and shop facilities to make useful articles for home. Others wanted to learn how to repair household goods. A minority of others wanted more experience with power tools so they could make things at home. The reason adults enrolled in shop classes are shown in Table 34.

An attempt was made to determine how many persons were planning to enroll in future shop classes, and whether or not shop classes should be offered during the summer months. Of the total group, four did not answer the question. Eighty said they were going to take additional courses; thirty were undecided; and only four were not planning to enroll further.

Summer courses were requested by forty-five and sixty-six did not favor summer shop classes. Seven persons did not respond.
TABLE 34
REASONS WHY ADULTS ATTENDED SHOP CLASSES

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Use Tools</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>For Recreation</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>Learn a Hobby</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>General and Technical Information</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>To Associate with Others</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>100</td>
</tr>
</tbody>
</table>

A list of twenty-one different industrial arts classes were suggested by students. Woodworking, carpentry, upholstering and wood finishing received the highest frequency. Investigation of the industrial arts programs of the schools in these regions reveal that wood courses or various forms of woodworking, were plentiful. This may have had some influence. However, it is interesting to note that each of the twenty-one industrial arts courses suggested were preferred by some adult.

Adults were asked if they had previous experience in operating power equipment prior to their enrollment in a shop course. The number of persons who had not had experience with power machinery was fifty-four. Thirty-one students had used power tools before enrolling. This question did not apply to the thirty-four adults in the two radio
classes and the upholstering class. Four persons did not answer the question. The band saw was found to be the most used power tool while the metal shaper was used least. The frequency of use of the various shop equipment is given as follows: band saw, sander, circular saw, drill press, jig saw, wood jointer, wood lathe, wood shaper, and metal shaper.

Students in each of the four regions and the District of Columbia, worked in forty-six different occupations which were classified according to occupational prestige. The number of persons representing various categories were presented, and the majority of adults were placed in skilled manual occupations. Seventy percent of the students were found to be over thirty years of age, 71 percent were married, and 48 percent had children in school. Of the 118 adults in all classes, 72 percent had graduated from high school, 37 percent had taken industrial arts courses, 22 percent had at sometime attended a trade or vocational school, and 25 percent held a college degree.

Most adults attended evening classes to learn to work with tools so that they could make things at home. Seventy percent were planning to enroll in shop courses, 26 percent were undecided, and 4 percent did not plan to enroll in the future. Summer classes were not favored. The woodworking areas were chosen most frequently by a majority of persons in the evening school classes polled.
ANALYSIS OF INTERVIEW DATA

Visits were made over a period of three months to Senior Citizens Centers in Yellow Springs and Dayton, Ohio; the program at Antioch College in Yellow Springs, Ohio; the Goodwill Industries of Dayton Night School, and the Rehabilitation Center of the Veterans Administration Hospital in Dayton; the Adult School in Kettering, Ohio; the Rehabilitation Center of the Veterans Hospital in Chillicothe, Ohio; The Center Street Young Men's Christian Association Adult Program and the Springfield City Schools Adult Education Program in Springfield, Ohio; the Brightmoor Community Center in Detroit, Michigan; the Mott Foundation Adult Program in Flint, Michigan; and interview data from the Hempstead Center for the Retarded, in Long Island, New York. A record of existing programs, number of classes visited, and the number of supervisors and instructors interviewed is shown in Table 35.

An over-all view of the visitations reveals that many features were similar in nature and approach. Whereas a number of the agencies were offering adults work and training experiences in metal jewelry, ceramics, weaving, basketry and the like, many supervisors and instructors were not aware that industrial arts activity were taking place. Emphasis was specifically placed on industrial arts in such centers as the Kettering Adult School, the Mott Program,
### TABLE 35

**INDUSTRIAL ARTS PROGRAMS VISITED, SUPERVISORS, AND INSTRUCTORS INTERVIEWED**

<table>
<thead>
<tr>
<th>Programs</th>
<th>Classes Visited</th>
<th>Supervisors Interviewed</th>
<th>Instructors Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Citizens Center, Yellow Springs</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Senior Citizens Center, Dayton</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Veterans Hospital Center, Dayton</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Veterans Hospital Center, Chillicothe</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Antioch College</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Kettering School Center Street Y.M.C.A. Program</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Springfield Program</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dayton Night School</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Goodwill Industries</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brightmoor Community Center</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mott Foundation Program</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Hempstead Center</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>13</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

Goodwill Industries, and in the rehabilitation centers of the veterans hospitals. The shops were equipped with industrial machinery and handtools, and were conducted on an industrial basis.

At the Goodwill Industries 50 percent of the staff are persons trained in industrial arts and other industrial and vocational subjects. Manual arts therapists and other instructors in the rehabilitation centers of the veterans hospitals held degrees and certificates in industrial
arts. Many of these had taught industrial arts in high schools. Staff personnel in the other agencies were employed on the basis of their wide experience in some trade or because of their ability to handle instruction in the industrial arts area being offered. Instructors in the Mott Foundation Program and the public school sponsored evening programs for adults were members of the day school staffs. These teachers held degrees in their subjects from accredited colleges and universities.

Arts and crafts predominated the programs in the Senior Citizens Center, the Y.M.C.A., and the Brightmoor Community Center. There is a large and continuing demand for training in lapidary, ceramics, metal jewelry, leather-craft, oil painting, weaving, decorations and gift making, in these centers.

Exemplary of the broad programs of industrial arts are the programs at Goodwill Industries, Rehabilitation Centers of Veterans Hospitals, and the Mott Adult Program of Flint, Michigan. A detailed account of the visits to these institutions seems pertinent to the study. The Goodwill Industries carry on four basic rehabilitation steps:

1. Work evaluation
2. Job training
3. Sheltered workshop employment, and
4. Job placement
Goodwill provides medical supervision, physical therapy, orthopedic clinic services, psychological evaluation, travel training for the blind, blind homemakers cooking classes, and group recreation. Financial aid for these services and courses come largely from the Community Chest. The workshop program receives no subsidy. This equipment include such items as sewing machines, drill presses, tapping attachments, 4-spindle drill press, abrasive grinder, engine lathes, sand blasts, wash spray booth, pneumatic glass cutting machine, acetylene torch, electric welder, disc sander, electric cloth cutter, friction re-tapper, small abrasive cut-off, and a small tube bender. Goodwill workshops are equipped for and capable of handling such operations as assembling, paper collating, burring, small parts repair, riveting, light drilling, erasing sound discs, laundering and fireproofing, machine sewing, polishing, spray painting, painting by hand, slotting, sorting, sand blasting, welding, silver soldering, tapping, small tool repair, and stringing tags.

The Director of Goodwill Industries stated that the vocational areas of the program were actually a series of minature job samples in a realistic work environment and were selected because they offer basic insight into a large number of specific occupations industry. Wherever possible, job projects are taken from the assembly lines of various businesses. Illustrating the task Goodwill sets itself in
the project of training and rehabilitating people, 60 percent of the applicants or trainees have never worked gainfully before. Most have led sheltered lives with their needs cared for by others. The correct vocation means the difference between happiness or despair, advancement or dismissal. Thus, Goodwill Industries is attempting through scientific and vocational guidance and through a wide variety of work experiences, to contribute to the lives of many people who otherwise would never have a chance to enjoy the good life.

The rehabilitation Center of the Veterans Administration Hospital in Chillicothe, Ohio has well equipped woodwork, electrical, shoe, machine, upholstery, printing, and ceramics work shops. These are on the average 35 by 80 feet and have ample space for many operations. Photography and woodwork were the most popular courses selected by the veterans recommended for manual arts therapy. Volunteer help and rehabilitation research have been contributing factors to the success of the program. One of the major problems is adjusting the program for aging patients. It is carried every week of the year. No night classes are conducted. The program is specifically one which trains for treatment purposes and no formal certificate is issued at the completion of the course. This same type of program is being conducted at the Rehabilitation Center of the Veterans Hospital at Dayton.
The Mott Foundation Program as described in Chapter IV has an industrial arts program for adults which is in many ways different from the programs discussed above. Classes in automatic washer and dryer repair with twenty-two adults enrolled were unique, for these were meeting adult needs for training in an area outside of recreational interests. Another such class was one in golf club repair. Others were entitled "Hobby Shop," "Jalopy Repair," and "Model Car Construction."

The coordinator of the mechanical skills program explained how changing the name of a class in "Basic Engines" to "Automobile Engines" helped in filling the class with eager, interested students. A shop mathematics instructor, in evaluating his course, stated that many of the adults had to regain their feel for mathematics. They exhibited a willingness to learn, and all students turned in homework rather faithfully.

Twenty students were enrolled in a "do-it-yourself" course. Garage construction was the major project underway at the time of the visitation. Enthusiasm was high and the work progress was steady and productive. The instructor of a class in "Bishop Sewing" was quick to explain that this is a new method of clothing construction. It teaches modern methods of sewing quickly with professional results. Aprons, skirts, and blouses were being made. Data from the questionnaire submitted by the Mott Foundation Director actually
reflect the extent and quality of the program in industrial arts as seen by the writer during his visit in Flint.

Young adults who are mentally retarded, physically handicapped or emotionally disturbed are found to be learning to face life with dignity and hope at the rehabilitation center and workshop of the Hempstead Center for the Retarded. Miniature life situations are being experienced daily by 75 persons, 17 to 40 years of age who work, eat and play together at the association's center in a factory loft in Hempstead, Long Island. The trainees work at a variety of jobs in an environment that is planned to be similar to that in industry. Despite low intelligence in the group--I.Q.'s range between 30 and 75--each persons gets a job he can do, and is paid for his work.

The contracts on which the trainees work are obtained from industry, and the standards and deadlines are the same as those for normal workers. Money earned through fulfilling these contracts is paid to the trainees in wages. The director of the center said that the average trainees earned $11.00 for a twenty-five hour week, with a low of $5.00 and a maximum of $25.00. The expenses of the center and the salaries of the supervisory personnel are met by the association. Among the jobs taught are assembling and packaging, typing, mimeographing, addressographing, sorting, cooking and waiting on tables. Trainees also have learned to use power-operated equipment to assemble aluminum window frames.
Their efficiency in performing these jobs is illustrated by a conveyor belt assembly machine used for manufacturing wallets. The machine was set by the contractor to process 2,100 units an hour. The trainees decided this was too slow, and increased it by 300.

A modern kitchen in the loft is operated by girls who are being trained as domestics, hospital orderlies, and waitresses. They plan daily menus, shop for food, cook and bake. They also collect money, make change, and wait on tables.

It has had 500 referrals in the five years the workshop has been in operation. The supervisor in charge of placements stated that seventeen trainees were successfully placed in industry last year. In some cases they have failed and returned, generally because of lack of community understanding. He felt that one of their major jobs was to convince industry that the students were a potential working force to fill in periods of limited availability. The center does not charge a fee.

Interpretation of Industrial Arts. Instructors were asked if they thought industrial arts was being better interpreted to the public through the presence of adults in the shops. An affirmative answer was received. The following are quotations from the interviews:

"Adults get a first-hand account of what workshops are like and the work we do in them."
"Adults have developed a wider interest in workshop activities by participating in shop classes."

"Depends on the shop and the instructor; a bad influence can be made if tools are not sharp and the shop is in poor condition."

"Some people in this class had taken industrial arts courses in high school, but I would say that it is being interpreted to more people by giving them the opportunity to work with tools and materials."

"This was a motivating factor--bring them into the shop and let them use tools."

**Summary of Data by Interview.** It was found that industrial arts programs were being conducted in all of the schools and centers, even though some of the centers were not aware of or neglected to label their offerings as industrial arts offerings. Each agency had a full time supervisor and a staff of volunteer or paid personnel. Class offerings were dependent, in many cases, upon student interests, and registration was required in all areas. Instructors generally held degrees in the subjects they taught, others claimed long years of experience as the basis of their teaching. Curriculum offerings were similar in most of the schools and agencies with arts and crafts courses attracting senior citizens and trainees in the community centers.
CHAPTER VI

IMPLICATIONS OF THE INDUSTRIAL ARTS PROGRAMS

This chapter delineates the role industrial arts plays in improving adult living. It is realized that adults have other sources of education than the school. A few of the more important are the radio, television, newspapers, magazines, and club meetings. However, it is still the responsibility of the school to supplement this where possible. Naturally, attendance in school programs would be a matter of choice on the part of adults. The classes must be diversified and rewarding to the extent that adults will become interested in availing themselves of the opportunities offered. Some of the contributions and requirements for an industrial arts program in a school, community agency, or club group are presented more fully under the following headings:

1. Home Workshops and "Do-it-Yourself" Activity.
2. Rehabilitation and Therapy as a Means.
3. Recreation and Camping Activities.
4. Increase of Interests and Latent Skills.
HOME WORKSHOPS AND "DO-IT-YOURSELF" ACTIVITY

The home workshop is what the name implies. Originally, it was the home repair shop with economic and utilitarian purposes. Since the advent of portable machine tools, it has become the home hobby shop. The home workshop may be equipped for work with any of several materials. For purposes of this study, it includes any shop facility which is designed for processing and constructing materials. Contributions of industrial arts to the home workshop movement evolve from the regular school instruction in tools, materials, and machines. It has been found that projects in industrial arts classes, in which adults construct home workshop equipment, encourage and expand "do-it-yourself" activities in neighborhoods and communities more than any other efforts to keep adults active. Interest in such projects may become so consuming that adults get involved. The home workshop, then, takes on a dual purpose as it becomes both a recreational center and the beginning of a finer living for the family. One of the major functions of industrial arts is to provide home workshop enthusiasts with technical instruction so they may apply these in the home.

"Do-it-yourself" activities include a wide variety of manual jobs such as designing, constructing, repairing, remodeling, and refinishing. The original purpose in the movement was essentially economic. Later, however, as more
leisure time became available, adults found the home workshop an excellent place of recreation as well as for home improvement.

A number of surveys have indicated that courses in "how-to-do-it-yourself" definitely benefits adults who avail themselves of such opportunities to learn or to improve their skills. The technical and consumer functions of industrial arts together with the recreational function, as discussed in Chapter III, are characteristic processes and modes of conscious action in the home workshop. Evidence of economic and recreational values that adults gain from such activity is enormous and improved living is a natural result.

Ted Craig (70, p. 35), writing in the publication "Profitable Hobbies," tells how a long retired cowhand who had learned to handle a lariat and bridle on the western ranges back in the 1980's, has found that he now can produce the same equipment in his own living room for profit and enjoyment. The ex-cowpuncher is Jesse Rea, 84 year old, a self styled "horse tail hobbyist," who now rides the rocking chair in his farm home a few miles outside of Wichita, Kansas. Rea's hobby is the braiding of lariats, bridles, riding crops and other items from horse hair. His braided articles sell upwards to $60.00 each. A craft he learned many years ago now earns astounding profits. Contending
that he does not "charge as much as he should," he lists these average prices for his work:

- A 35 foot lariat: $60.00
- Hair bridle: 40.00
- Walking cane: 8.00 to 10.00
- Riding crop: 5.00
- Dog leash: 5.00

The walking canes are aluminum sticks (obtained from surplus stocks of Wichita aircraft plants) covered with braided hair, and the lariats are made from regular hemp or cotton rope covered with hair. Other items are solid braids of hair.

Joseph Charles Salak (36, p. 15) in an article entitled "This Hobby World," reports that more than thirty-five years ago:

Leslie C. Feltier of Delphos, Ohio, picked 900 quarts of strawberries to earn $18.00 with which to buy a telescope. Since that time, finding comets has been a hobby for the amateur sky angler. He has discovered ten new comets, never seen by man before which have been named after him; he has reported 90,000 changes in variable stars and holds the amateur astronomers medal for meritorious service to the science of Astronomy. Only one other such award has ever been granted. November 14, 1925, he discovered his first comet. He uses a six-inch telescope given him by Princeton University in 1923 and watches the heavens from his own tiny observatory, a unique tin shack on a twintable in his back yard. Although Dr. Harlow Shapley, director of the Harvard University observatory, hailed him in 1923 as "the world's greatest non-professional astronomer," Feltier experiences a much greater thrill every time he carefully touches a tarnished and dull brass case and slips it back into its cracked
and dull leather container. That is the telescope he purchased many years ago for 900 quarts of strawberries.

Do-it-yourself activity as a way of life is described by Mary Starr Barkely (66, p. 37) as a "Hobbyists' Heaven":

A Texas veteran has built a business around his hobby of woodworking, and today his shop provides a place for men and women too, for that matter, to work with wood, whether it is a boat or a doghouse. The Hobby Workshop where you can make it yourself. For the use of the equipment in the workshop, patrons pay a deposit of $10.00, which is refunded upon termination of work done in the shop. Many of the customers prefer to charge materials purchased and fees for rental of machines, on a weekly basis. The deposit is protection against non-payment. A workbench, with locker space where a project may be stored when a patron is not working, may be rented on a weekly basis for $1.00, or by the day at 35 cents. Shop time, which covers all time spent in the workshop by the hobbit, is covered by a rate of 20 cents an hour. This entitles one to use all the hand tools needed. Power driven equipment and tools are available at reasonable rental. For five minute periods or less, there is a charge of 5 cents for each of the following power driven tools: Circular saw, belt sander, bandsaw, lathe, drill press, grinder, scroll saw, jointer, disk sander and abrasive finishing machines. For the shaper, the fee is 5 cents a cut. The portable electric sander costs 20 cents an hour, as does the portable electric router. Electric hand drills cost 15 cents an hour. For about half of what a picture show would cost, one can use every tool in the shop for a period of two hours.

Even though the work accomplished is relaxing and recreational, investigations report the extent of projects that adults undertake. Most products of their hobbies are usually practical. Boats, lamp bases, picture frames, chairs, chests of drawers, clothes hampers, coffee tables, dining and kitchen tables and chairs, children's toys, gun
stocks, gun cabinets, radio cabinets, house trailers, and a part of a church altar indicate the practical and useful items that adults construct.

The patrons are people of all classes: physicists, professors, students, teachers, salesmen, ministers, doctors, dairymen, and others. Planned social activities in the shop enhance human relationships and inspire interaction and cooperation.

Summary. The above report clarifies the role that industrial arts programs play in improving adult living. People who engage in industrial arts activities increase their skills through experiences with tools, materials, and construction enterprises. Industrial arts provides opportunities for students to share their ideas and experiences. Industrial arts is frequently listed in the curriculum for special groups of adults. Industrial arts experiences may serve as a core around which programs of general development can be built. Industrial arts plays a large part in Americanization training, because of its unique contributions to a foreigner's interpretation of American industrial life, and to his adjustment to local and national conditions. Industrial arts also stimulates many adults to become interested in the handicrafts. Self expression is gained by creating an object with the corresponding benefits to the individual in terms of accomplishment and pride. Good taste is developed, appreciation of beauty and
craftsmanship is gained, skills with tools are extended, and knowledge of industrial processes and of the problems of workers are acquired. These are only a few of the many implications of industrial arts for improving adult living.

With the advances of automation, many people have a greater amount of leisure time. No longer is it necessary to spend all one's time making a living, with so many unoccupied evenings available. Many people do not have a hobby and others do not have the equipment necessary for carrying on home workshop activity. Hence, these adults, like the youth of the community, can find the opportunity to engage in their hobbies and to use equipment which would otherwise be idle.

In such an environment many new ideas and interests will be stimulated by seeing what other people are doing. In addition to hobby or leisure time activity, many adults use the industrial arts laboratory in their spare time to build small articles of furniture and to mend broken furniture and tools used at home.

REHABILITATION AND THERAPY

The extent of the use of industrial arts activities in hospitals, sanitariums, and similar institutions attest to their effectiveness as instruments of therapy and rehabilitation. The therapeutic values for body and mind are especially significant. The projects and activities carried
on often resemble those commonly seen in public school programs. Henry H. Kessler (32, p. 96), writing on "Rehabilitation of the Physically Handicapped," describes the physical facilities necessary for such a program as including what could be termed a "general shop," when he says:

An occupational therapy department that is properly equipped and manned works in close harmony with the physical therapy department. It should include three sections: (1) a program of arts and crafts which can be taken to a patient's bedside, (2) a special shop or department that will provide as wide a variety of activities as personnel and finances will permit. The basis of such a department is a carpentry or woodworking shop, and to this can be added a weaving room with various sizes of looms, sewing machines, and equipment for printing, besides the customary handicrafts, (3) the third would be the aptitudes in order to help students find interesting and suitable work. . . . activities that could be used for this purpose are printing and bookbinding, sign painting and commercial art, jewelry and clock repair, electric work, machine and mental work, drafting, and radio repair. . .

No rehabilitation program can possibly be considered the work of one agency or institution. It is rather the product of the many services working to assist a patient. Incentive Therapy is a fine example of such a program. Though often directed by hospital personnel, it depends on voluntary service organizations and community resources. Money is the prime incentive of the program. This is provided through the public sale of useful articles made by patients. A patient may choose to work in leather, ceramics, or wood. He is also given an opportunity to make a change periodically in these areas of activity. When a patient has
shown the necessary degree of improvement in rehabilitative work projects, and if his doctor feels that he can profit therapeutically, incentive therapy is prescribed.

Perhaps the adult knows so little about the work that he must start from the bottom. That is likely to be learning to lace a small leather coin purse or mixing clay. If, however, the adult has worked in one of the three activities as a hobby before his handicap or in one of the occupational therapy clinics during a previous assignment, then he is allowed to start at the level of skill he has already developed and is paid accordingly. This does not discourage an adult from working up from the bottom when he has the incentive. With proper application of time, effort and helpful guidance, he can become skilled in industrial arts activity within a few weeks. In these incentive therapy programs, a real work-a-day situation is approximated. Adult work conditioning may be built up to the point where he can hold a job of greater responsibility within a hospital or other agencies while in preparation for that most important step, namely to work outside. An industrial arts program of this type is not an end, but one of the important means toward improved living for those engaged in rehabilitation and therapy activities.

Industrial arts rehabilitation programs operate on the principle that man's social adjustment can only be regained if his individual worth and dignity are restored.
To provide him an opportunity to earn that money through useful occupation does engender feelings of self-respect and personal value. While money is a prime factor or incentive, the benefits of such a therapy go deeper into satisfying the emotional needs of the participant. New skills, both physical and social, help these adults to gain the confidence, self-reliance, and feeling of usefulness so necessary to good social adjustment within a community.

The present policy of the Veterans Administration, Division of Physical Medicine and Rehabilitation, is to try rehabilitating every sick, injured or disabled veteran for purposeful living and a normal live compatible with the scope of his abilities.

This simulated work situation of an occupational and/or industrial nature is commensurate with the individual's capabilities. Manual arts therapy in hospitals must of necessity differ from those used in educational institutions. Patients are entering and leaving the hospital daily, so that courses cannot be started, pursued, or ended in the customary manner. Patients must be instructed on an individual basis without regard for public schools standards.

Though no official instrument has been developed for measuring the success of the program, the number of rehabilitated veterans and other civilians being discharged daily from Veterans Administration Hospitals and similar public and private rehabilitation centers throughout the United
States, who have benefited by this form of therapy, should bear testimony of the effectiveness of the program.

Rehabilitate people in many instances use their skills obtained in the centers in occupational endeavors after they are discharged. Thus, the occupational as well as the technical function permeate the treatment involved.

**Summary.** Although little has been written, there is ample evidence that the effect of having undergone such therapy in workshops and laboratories was effective and rewarding. Follow-up studies also show that the implications of rehabilitation and therapy as a means toward improved living for these people engaging in industrial arts activities had solid "carry over" value as evidenced by the smooth transition by most of them from hospital to home life.

In the rehabilitation centers, many of these handicapped people must start with the most rudimentary beginnings in order to manipulate, coordinate, and assemble the simplest of jobs. As these skills increase, they move on to more difficult tasks. While they are undergoing this process, their development is sometimes rapid, sometimes slow. Nevertheless, the routine and the expert work of the therapist assures progress in so many cases. Those who do succeed increase in confidence and move steadily on to self-assurance, self-realization, and a conscious self-analysis of their capabilities. Such industrial arts areas as leathercraft, ceramics, and woodworking are major projects in
incentive therapy that account for the speedy and effective rehabilitation of many of the handicapped. Other manual arts courses weigh heavily in the treatment of these patients, for they are courses that inspire and promote a desire for living.

RECREATION AND CAMPING ACTIVITIES

The economic and social importance of recreation in the United States can no longer be discounted. Community recreation is cast today in a greater role than ever before. Stimulated by the basic human desire to live a full and rich life, recreation is taking shape in the present period of rapid change from a domestic to a technological society with the potential abundance of leisure time. The work week is becoming shorter as new industrial processes reduce the need for human toil. More healthy indoor and outdoor exercise will be required. Industrial arts programs are means of providing indoor recreation, while at the same time, contributing to the development of closer interpersonal relations. Adults comprise a significant segment of the population, and the potential growth of this group indicates the need for immediate and specific program planning. John L. Hutchinson (26, p. 74) writing in Principles of Recreation says:

Recreation leaders must realize the following:
(1) the machine age ignores the older person;
(2) the older person faces enforced vocational
retirement at the age of sixty or sixty-five; (3) security during leisure, supplements the securities of employment, health, home and income; (4) the proportion of oldsters to the rest of the population is increasing steadily; (5) chronological age does not necessarily indicate capacity; (6) the aged do not enjoy a pleasing state of leisure; (7) competence and creativeness do not cease at any specific age; (8) competitive and active experiences are not necessarily contra-indicated; and (9) a delay in developing programs for the older person may prove a national injustice to the age group. With these factors in mind, recreational authorities may materially reduce the undesirable plight which many older people face.

This study presents evidence which indicates how industrial arts programs may help in understanding adults and providing activities and courses as Hutchinson proposes.

From the standpoint of family outdoor life, camping, picnicking, and traveling, a number of studies show how industrial courses have enabled adults to provide, plan and enjoy these pursuits during leisure. A camping project can include the construction of portable grills, broilers, ovens, ice chests, cooking utensils, boats, luggage and camp trailers. Such a project involves other functions of industrial arts, but emphasizes the recreational.

There are two basic plans for the utilization of industrial arts in community recreation as well as programs in private agencies. First, the industrial arts teacher can conduct recreational activities in the school laboratory, in crafts for children and adults in the evening, or during
summer. This method has gained little acceptance among industrial arts teachers, although it would be acceptable to most communities.

Second, the industrial arts teacher trains recreation leaders. Even though he may have had little preparation in recreational crafts, he can instruct the leaders in the techniques, and they in turn can convert those techniques to recreational uses. Such a program could be adapted to suit the needs of all crafts leaders in the community. It could be directed in cities toward the programs for parks and playgrounds, settlement houses, churches, and other agencies. This proposal makes fullest use of the talents of the industrial arts teacher and at the same time provides a reservoir of competent leaders. In this capacity as leader-trainer, the industrial arts teacher conducts activities with opportunities for closer adult personal relations.

Crafts may cover a range as wide as any instructor is able to teach. One method of choosing the course content is to write several types of craft activities on the blackboard at the first meeting of the class and allow the class to choose by vote. One such grouping could be:

Art metal
Basketry and Raffia
Beedcraft
Block Printing

Leather craft
Model making
Plastics
Stained glass
Bookbinding  Textile painting
Ceramics  Toymaking
China Painting  Weaving
Design  Wood Burning
Etching  Woodwork
Flower Making

In making such a system, the list of activities would be taken from any that the instructor wished to include. Any one of these activities is of such a nature that only the fundamentals need be taught in an introductory course after which, each could be extended to a full course, depending on the amount of specializing desired and the equipment.

The composite shop is closely related to the field of handicrafts with the exception that power tool experience is added; in many cases some craft courses will be included in such a program. Either one of these types of shop work will lend itself to adult education. Having both educational and recreational value, they have been popular. In using varied activities in one course, it is advisable to keep the projects small in order to minimize expense and spoilage. This also insures that the student will be able to complete each course before losing interest.

The adaptability of the various types of school shop makes endless recommendations possible. Each community is different and any program suggested by one unfamiliar with local conditions would not be considered valid. The program
can best be determined by those on the scene who will be taking an active part in its activities. Maintaining the accepted standards of content and achievement is essential in planning any course in adult education.

Summary. The home workshop and "do-it-yourself" activities have already been described as home-centered, but the crafts media, too, have implications here, as being closely connected to recreation and camping activities. The handicrafts fill a void in adult recreation when machine tools and the necessary facilities are not available. Work with textiles, clay, stone, leather, plastics, metals, and woods, as well as other materials can be done exploited. Many activities with these materials require a few tools and a little space, so that even apartment dwellers can engage in this form of recreation.

Three basic media for recreation are inherent in industrial arts. They are the crafts, the home workshop, and opportunity for "do-it-yourself" activities. Through these, the objectives of recreation can be achieved. The mission of providing avenues for closer personal relations will be effected as well. Thus, the recreational function of industrial arts is seen in the program planned to the realization of this goal.
INTERESTS AND POTENTIAL SKILLS

Industrial arts activities are common to most adult education programs. There has been a continuous growth of industrial arts at elementary and secondary education levels. Many laboratories have been built and equipped. With the ever increasing number of teachers available, industrial arts programs are making a major contribution to the program of adult education. With current budgetary allocations expended for buildings and equipment, more laboratories are open to the ever increasing number of adults who desire such training. The capital already invested is not being used to capacity, while the adult population is looking for action to be taken in offering more industrial and practical arts courses in the adult education programs fostered by schools and agencies.

Marlene Berencsi (96) of the Dayton (Ohio) Daily News in an editorial on May 22, 1960 made this observation:

During 1960 more than 10,000 adults were enrolled in the Dayton (Ohio) public night school alone. Some were preparing for secretarial positions, others were cultivating a hobby, and still others were attempting to bridge those cultural gaps which they never got around to filling when they were last in school.

This is no unique phenomenon in public school circles, for adult education is rapidly becoming the saviour of those who would face the economic facts of life. Now that the die of automation and industrial efficiency is cast, adults
are preparing themselves for the breadth of skills involved. Incentives are increased, more goals are set, values are established, and potential skills are fostered when industrial arts programs are increasingly designed to meet the needs of adults.

Edward L. Thorndike (56, p. 45) in his publication \textit{Adult Interest}, has the following to say:

If a person tends to like most of that which he can do best, because the relatively greater ability produces greater interest, it may be expected that an increase in the absolute amount of ability will produce an increase in the absolute amount of interest. This is likely on other grounds; for increased ability usually results in more satisfaction to the cravings for achievement, mastery, the approval of others and the approval of oneself. It also results in less thwarting or frustration. These satisfactions obtained in connection with the subject or activity learned diffuse interest over or through out.

Other studies of adult interests substantiate Thorndike. Still others point to increased productivity and achievement that adults experience as their skills are developed. The implications of such activity in industrial arts laboratories, or in the home, give proof of the efficacy of adult learning by their improved living standards. The recreational function of industrial arts characterize this activity as adults achieve self-realization.

The following are a few examples of the many interests and skills that are increasingly exhibited by adults.
Kay Black (94) Dayton Daily News, staff writer, reported on October 31, 1960 in an article "Hobbyist Toils, But Who'll Do Spinning?"

There's a brand-new spinning wheel in George J. Lang's parlor. The industrious 86 year old just brought it up from the basement.

No, the nostalgic reminder of days gone by wasn't just stored down there. Lang built what he calls "a working model" in his workshop, then stained the maple to look antique.

But when you tell him so, the hobbyist replies modestly, "I was agreeably surprised how nice it came off the lathe."

Then Lang will explain, "A friend loaned me an old spinning wheel over 100 years old. The story is that it came down the Ohio river in '34" (Because his own life and experience spans parts of two centuries, he means 1834, of course). "I copied it from that."

The retired electrician turned out every inch of his spinning wheel himself, except for the spindle and shaft, which he repaired from a very old, broken one. . . .

Carl Barton (95) Dayton Daily News staff writer reported on January 28, 1961 concerning an "Over-50 Hobby Exhibit":

People in their retirement years will be exhibiting the products of their past time in an Over-50 Hobby show to be held here Sunday.

It will be the second such event sponsored by the Church of Christ on N. Main Ave. A previous show was held in 1958 and the Rev. Paul Moore, pastor, says his church hopes to establish it as an annual event.

Mrs. N. L. Dilworth, co-chairman of the show committee, expressed the church's aim as follows: "There is so much done for younger people and so little done for the older people reaching
retirement. We feel the need to help these people fill their long days."

The event will be held in the church basement from 3 to 6 p.m. There will be no admission and light refreshments will be served.

Among the items to be displayed, many of them familiar to Sidney residents, will be historic newspapers, wood removed from Independence Hall during remodeling, coins, baskets, stamps, needlework, rugs, ceramic objects, lamps, vases, artificial flowers and various forms of artwork.

Each exhibitor will be assigned a space in the church basement. The older people are pleased to be invited to the show and derive satisfaction from showing their hobbies to others who may get ideas for activities of their own from those on display. . . .

Conclusions. In the light of the foregoing, the development of a program of adult education requires insight into the needs of adults, knowledge of the means that lead to their satisfactions, the ability to translate insight and knowledge into actual opportunities for creative effort.

If a rewarding life is to be lived, it should have a secure economic basis. Adults give a great deal of attention to acquiring the skills which will enable them to enter upon an income scale at a satisfactorily high level and to improve their status either by sharpening skills already possessed or by learning new ones.

While occupational skills are valuable, many studies have proved that they are not a guarantee of a sound family life, even if it is productive of a satisfactory income. Hence, the need for adult education programs which embrace all aspects of family living.
Adult education is not concerned merely with leisure. It is justified if it enables an adult to utilize his time more constructively. In an age when the adult is being faced with more and more leisure because of technological advances, this purpose is accepted as a valid rationale for adult education. Adult education, like all good education, is something that is positive and purposeful. It exists to serve a definite cultural gain.

Every adult has needs that transcend his role as citizen, worker, parent, or homemaker. Every personality seeks for development, enrichment, and expression. This is one of the major opportunities of industrial arts for adult education. It is accepted that education must teach the "whole" person. In all educational activity, the adult must be stimulated to develop his potential personality.

The process of integrating the activities of a particular industrial arts program with previous experiences is primarily dependent upon the adult. Here the desire to achieve new ideas, and to re-examine past experiences, become centrally important. The industrial arts teacher can facilitate the integration process by providing a design or structure that may be adapted or changed as the experience progresses. The adult reacts, not only to planned learning experiences, but to the total setting in which learning
takes place. The friendliness of other participants and the informality of the environment will influence the learner's openness to new ideas and his ability to assist others around him. Improved adult living is an inevitable result.

It is seen that by definition industrial arts is an inclusive term. It is to be regretted that this term has often been applied to programs of vocational nature. Such misuse has added to the confusion.

Because of this it is advisable to indicate further clarification.

These terms are explained by Theodore F. Struck (51, p. 491) in the following quotation.

Vocational industrial adult education is of course directly concerned with increasing the vocational competency of workers in trade or industrial pursuits. The need for training, for retaining, and for frequent job re-adjustment is too apparent to call for proof. . . .

Industrial arts education, on the adult level aims to open up new avenues of creative endeavor largely followed in the spirit of vocational interests and hobbies. That there is increasing need for this is a commonplace. The shortened hours of employment, the specialization, routinization and repetition in occupation, and the high pressure of modern life call for a return to creative work done in the spirit of the artist-craftsman. For the White-collar worker, in particular, the home work-bench, the community club work room, or the school shop bench serves as a means of enriching and vitalizing life.
This study has been an analysis of organizational procedures and practices of industrial arts programs for adults. The literature in the field of industrial arts and adult education was reviewed, and questionnaires were sent to agencies and schools conducting programs of industrial arts for adults. These produced data relating to the organization, administration, operation, and structure of course offerings and enrollments. Visits were made to selected centers to validate information received on the questionnaires.

Interview forms and questionnaires were constructed to aid in determining how programs were administered, what industrial arts programs were attracting adults, the nature of the curriculum offerings, and to learn why adults attend evening and day school classes.

The programs were visited during the period of March 15 to May 26, 1961, supervisors and instructors were interviewed, and questionnaires were submitted to 465 adults in four geographic areas of the United States and the District of Columbia. The data were tabulated, and analyzed to
discover the status of industrial arts programs for adults in these areas.

This study revealed that interest in adult education is higher than ever before. Estimates based on national, state, and local levels indicated that up to 35,000,000 adults are interested in continuing their education. Many of these adults would have participated in such activity if it were available under competent leadership on suitable schedules and convenient locations. The study confirmed the assumption that in all areas investigated, public school building served the greatest number of adults seeking training. Community centers and settlement houses ranked second, and other public and private agencies were next. Where funds and adequately trained leadership have permitted expansion, increased enrollments have demonstrated the firmness of this interest. Furthermore, ample evidence indicated that this interest was increasing in educational centers that had buildings and facilities available, sufficient budget to finance various programs in industrial arts and other adult education areas, a competent staff, a publicity program, and advisory boards or other sponsoring groups to underwrite the program.

Adult education takes many forms ranging all the way from scholarly study to informal activities of a social and recreational nature. With the advent of more leisure, this study of the extent of the offerings of industrial arts
courses for adults reveals that adults are profiting from their pursuit of these courses and that this is reflected in the widespread activity of the home workshop and other "do-it-yourself" activities.

Industrial arts offers many opportunities for adult education. Instructors are widely trained in such areas as woodworking, metals, electricity, drawing and others. This training permits the instructor to adopt a program for adults that varies with the interests and needs of the community for which he is a part.

Investigation shows that adults may be concerned with recreational, consumer and other types of interests. They may also meet limited vocational needs through special courses designed to relieve technical unemployment, on-the-job advancement, or in the special needs of a community in periods of emergency.

This study also reveals that teachers and supervisors who are associated with both youth and adult programs in industrial arts know and realize the need for utilizing existing facilities. These exist not only in public buildings and equipment, but in adequately trained teaching and administrative personnel as well. The returns from adult education come in the form of increased production, a higher degree of economic stability, and a more refined social understanding of and by all people.
Because of the importance of reaching adults through the industrial arts, this study shows that schools and agencies involved in this undertaking hold as their major objective the wise and profitable use of leisure time activities both in the home and in the laboratory. The program must be wide enough to serve the needs of the entire community both at work and at play. Courses chosen in this way should be both educational and recreational in nature. Leisure, to be satisfying, must be creative. Many adult programs, as the study indicates, have proven to be successful and are models for other newly organized programs. No two communities are alike, and will have different needs and interests. Since the public has become accustomed to free education, it is recommended that the adult program should be developed in such a way as to keep the cost to the student as low as possible.

It is wise to use as many of the approved courses on which financial aid is available if they fit the need. Other courses may be offered that improve living standards. Because of the increasing percentage of adults, it is clear the schools are more conscious than formerly of the personal and social problems faced by persons who reach retirement age. Next to the removal of the rules for the arbitrary retirement at a given age, probably the most sensible approach, as revealed by the data, is to encourage active interests in hobbies which will permit adults to retire to,
rather than from something. The role industrial arts plays in this regard is a significant one. The writer found evidence that industrial arts cannot be defined as something separate and apart. It is an integral part of education for the young as well as the adult.

The ultimate purpose of general education is to transmit the culture and to assist the individual in becoming an asset to himself as well as to society. This study shows that industrial arts, being one of the several areas of general education, contributes to the realization of this objective through five channels:

1. Extension of individual education.
2. Development of manipulative skills.
3. Promotion of the conservation of resources.
4. Providing avocational opportunity.
5. Aiding personal and social development.

Since well over 50 percent of all employees in the United States are employed in some phase of industry, it seems imperative that the schools and other educational agencies responsible for educating the public assume an enlightened attitude toward the industrial environment. If an important purpose of education relates to the transmission of the culture, then the vital place which industry holds in the American way of life, should certainly call for a major emphasis upon these phases of the program that deal
with its exemplification in institutions concerned with programs of education for adults.

It follows that industrial arts contributes to the attainment of the goal of general education by furnishing experiences in the use of tools, materials, machines, and insights into those phases of the program that have become an important part of contemporary culture.

The objectives of industrial arts should not be vague and remote. They should be involved in changes teachers will endeavor to stimulate in their students. Their efforts must be specific so that adult experiences will insure fulfillment. Plans must be made carefully for incidental accomplishments as well as for the attainment of subject skills and related information. The courses must provide opportunity for acquisition of new skills and knowledges for more profitable use of leisure time, and for all persons who wish to explore the requirements of a trade before entering it.

One of the cardinal principles of education is "the profitable use of leisure." It is clear from the evidence that adults use their leisure time profitably in an industrial arts laboratory. It is recreational and beneficial. Statistics show that it is just as important to harness the leisure time of adults as of children. This responsibility is being met in urban and rural communities. A public school is no longer a place solely to educate children from
6 to 18 years of age. The modern concept of the school is that it should contribute to the educational needs of the people. Any program of adult education should be so broad as to embody industrial arts education. School systems and other community agencies explored in this study embody this activity.

CONCLUSIONS AND RECOMMENDATIONS

Continuing or adult education becomes a purposeful and systematic use of the opportunity to be a free and responsible citizen. It becomes a deliberate enterprise to enlarge the role of intelligence, awareness, and knowledge in the arena of decisions and action. Continuing education involves a society in which, not just its schools and other educational agencies, but all of its parts—its government, business, unions, homes, neighborhoods, cities, states, and nation—are concerned with helping individuals fulfill their destinies. This is the ideal of the educative society.

The writer conducted exhaustive research in determining the structure and significance of industrial arts education for adults with implications for adult living. Many facets of this subject were revealed. The conclusions derived are:

1. There is a lack of research and literature on the subject of industrial arts for adults focused on improving adult living.
2. Both men and women are served by industrial arts courses.

3. Evening school students are willing to pay a class fee and supply their own materials.

4. Class offerings conform to student demand.

5. The maintenance of adult student records is dependent upon program organization and administration.

6. Program publicity is instrumental in the success of an adult program.

7. Industrial arts is being better interpreted to the public through the participation of adults in shop classes.

8. Evening school programs are influential in helping other community organizations foster adult education.

9. Shop teaching involves individual instruction, and adults preferred this method.

10. Lectures, demonstrations, and visual aids are employed.

11. Supplies are generally requisitioned by the school or agency; in other cases adults obtained them from outside.

12. Industrial arts classes serve adults of both sexes and all ages.

13. A majority of students enrolled in adult classes have worked in skilled occupations.

14. Thirty-six percent of the adult students responding had never taken shop courses in high school.
15. A number of adults, 34 percent, indicated they attended evening shop classes to learn to use tools and work with materials.

16. A majority of adults currently enrolled have planned to enroll in future shop courses.

17. Woodworking was chosen as the first preference of a number of the students polled.

18. Of those attending shop classes, 68 percent had had no previous experience in the use of power tools.

19. Many industrial arts programs for adults are conducted without ample funds and equipment.

20. Despite this, the major functions of industrial arts are being realized.

21. Community committees and advisory councils along with local, state, and federal boards plan and support adult education programs.

22. Adequately trained personnel in industrial arts is limited. Volunteer help must be utilized in many cases.

23. A wide variety of industrial arts courses are being offered in the schools and agencies.

24. With more leisure time available, increasing numbers of adults are enrolling industrial arts courses to train for home workshop and "do-it-yourself" activities.

25. Adults receive some type of award in the form of grades, certificate, or ratings upon completion of industrial arts courses.
26. Agencies and schools engaged in adult education have as their common purpose many objectives aimed at the improvement of adult living.

27. Surveys are the best means by which adult education offerings can be improved.

28. Follow-up studies show that adults completing industrial arts courses do enjoy a better and happier life.

29. Agencies engaged in the rehabilitation of the veteran or of the handicapped, conduct programs that are effective and profitable.

These conclusions summarized from the data gathered in this study give rise to many recommendations for the improvement of industrial arts programs. Several recommendations, conceived in the light of the findings, should apply when new programs are devised. These are as follows:

1. With the growing interest in adult education, colleges and universities preparing industrial arts teachers should arrange to include some of the fundamental principles of organizing and conducting adult classes in their curricula.

2. Consideration should be given in the future to the adult program when new industrial arts facilities are planned.

3. The difference in community needs make it impossible to recommend a shop program that would be practical in all situations. Therefore, it is recommended that
industrial arts instructors take the initiative in each community to organize and conduct a program according to local needs.

4. More research and literature concerning industrial arts for adults should be produced.

5. The leisure time activity of adult education should be included in state appropriations for adult education.

6. When state allocations are designated for the Industrial Arts phase of the adult program, the allotting agency should invite reports concerning the potential number of interested adults, size of shop, facilities, and programs desired.

7. Administrators and industrial arts teachers in agencies and schools should plan the promotion of adult industrial arts programs on a much wider basis in their communities.

8. Facilities should be made for storage space in school shops where adults can leave their projects without conflicting with day school students.

9. Adults should have more opportunities to participate in a wider variety of shop courses.

10. All the schools and agencies conducting adult education programs should be activated by a variety of courses. The true end of community development, as of all adult education, is to make life better.
11. The educational community should be studied to shed light upon the learning potentialities of institutional structures.

12. The major task of the program developer should be to schedule educational activities that will be liberalizing in their impact upon adults. The emphasis must be upon providing values, attitudes, skills and habits of mind which help each person to grow.

13. It is recommended that an adult education program evaluator develop a usable set of criteria. He must then restate them in behavioral patterns to determine what changes are expected.

14. The program developer should be mindful that the integration of educational experiences requires that participants secure an over-all perspective of the total experience, rather than a segment of one.

15. There should be a sharp increase in quality and quantity of adult educational opportunities and materials.

16. There should be further research so new facts and experience can provide a basis for intelligent discussion.

17. An educator should study the social sciences to understand the ways in which life influences, and in turn is influenced by education.

18. A leader should understand the breadth and variety of his field and accept the fact that it includes countless aims and approaches. He must also develop a set of values
to select the activities he wishes to undertake. These will guide in building a superior program.

19. More facilities and programs should be provided.

20. Public understanding should be created to assure ample financial support for adult education.

21. There should be closer coordination with business, industry, organized labor, and similar organizations in the education of adults. Community enterprises look to such groups for their employees. These may be willing to support schools, but the gap is wide.

22. Evening college and extension divisions should make self-surveys and hold conferences with administrators and faculty members to re-examine their objectives and programs of adult education.

23. Agencies should be provided for non-service people in communities throughout the United States with programs similar to the training programs of the Veterans Administration for the purpose of restoring lost educational or vocational opportunities to veterans whose ambitions had been interrupted or impeded by military service.

24. Adult educators should employ mass media to build common loyalties—a sense of community—among the population of a metropolitan area, to develop more consistent value structures, and bolder and more compelling images of the good life. They will render a service of incalculable value to the people they serve.
25. The adult education movement should be extended into unserved districts since the school reaches more people in more places than any other educational institution.

26. The community center, settlement house, and club rooms should make an attempt to learn from each other since all are concerned with inter-personal relationships as the basis of learning.

27. There should be increased effort to promote an understanding of the unique role and function of the voluntary organizations such as Parent-Teacher Association, Citizens' Councils, and Leagues of Women Voters in the adult education movement.

28. There should be increased emphasis upon active cooperation and correlation between adult recreation agencies in order to provide quality as well as quantity service to the public.

29. It is recommended that adult programs should be more carefully studied and general rules should be better adapted to the needs of the adults attending than many programs now in operation.

30. Another recommendation which needs some emphasis here is the fact that adult teachers often lack the personality which is necessary to carry on an effective program. They do not inspire confidence in their students and do not know how to meet adults easily and freely. Greater emphasis
should be given in training institutions to the development of personality traits if these are not sufficiently developed in laboratory and classroom work.

31. It is recommended that the self-sufficient attitude of some adult agencies should be replaced by a feeling of mutual effort to help the adult and a willingness to cooperate with any and all agencies operating wards that end.

32. It is recommended that an adequate adult education program:

a. Should grow out of demands, interests, and needs of all adults of all ages and socio-economic levels.

b. Should be flexible and accessible to the population with reference to location, time, psychological setting, and cost.

c. Should utilize all available leadership, both professional and lay.

d. Should help adults become better adjusted within themselves, and to become aware of their obligations and relationships to the larger world.

e. Should assist individuals in adapting to changing world.
SUGGESTIONS FOR FURTHER RESEARCH

This study has opened a door to a panorama of adult industrial arts program possibilities. The experiences gained in this study point to the need for clarifying the following:

1. The relation of industrial arts to other meaningful activity in the light of the "new leisure," characterized by technology, to "open class" behavior, to trends toward conformity, and the search among educators for sources of constructive values.

2. The dynamics of how choices for leisure activities are made and modified. An ethical problem precedes this, namely what justification do the leaders of opinion seek to bring about in the change of tastes or behavior of adults?

3. The training of teachers of industrial arts who are concerned with social as well as mechanical values and skills, and who can build upon the existing value systems of their students.

4. The significance of industrial arts in a society which becomes increasingly scientific in its outlook.

5. What particular mental, physical, and emotional needs are important to adults in the community?

6. What do adults want from adult education agencies and why?
7. Can educators help develop wants, so they are closely allied to adult need?

8. What needs of individuals and community groups are within the concern of agency or school?

9. How do adults vary in different social settings and economic backgrounds?

10. Is there a pattern and cause that identifies some institutions more closely with certain kinds of adult needs than others?

11. Should a school or agency program be directed toward meeting specific, or general needs?

12. What are the most effective ways to survey community resources?

13. Are community resources being effectively used in meeting the school or agency goals?

14. How do different administrative structures effect the educational program?

15. What can be done to attract more adults into industrial arts programs planned to "do-it-yourself" activities?

16. To what extent are selected methods of teaching adults useful in formal and informal learning situations?

17. What is the comparative effectiveness of the teaching of a professional educator and of a volunteer who teaches after a short period of "leadership training"?
18. When are television, radio, and bulletins most useful?

19. Which methods are most effective with adults of high educational level and which with those of limited educational background?

These questions are asked about the individuals and groups with which schools and agencies work. Research is needed to find the answers. The lack of definiteness produces two key problems for research: what are the objectives of adult education and what are the outcomes?
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NEWSPAPERS


97. Toledo Blade (Toledo, Ohio), March 14, 1953.
APPENDIXES
APPENDIX A

LETTERS WRITTEN
Dear

This concerns my dissertation at The Ohio State University in Columbus, the subject of which is "Industrial Arts Programs for Adults: An Analysis of Organizational Procedures and Practices with Implications for Adult Living."

I am in need of certain data you may be able to supply that will aid me greatly. Your office, in the field of Adult education has been selected as a source of information and I would appreciate your assistance.

Please supply me with names and addresses of programs of industrial (arts) education which are providing for the continuing education of Adults.

Any other material or sources of materials provided by your office will be highly appreciated. You may bill me for these materials.

Thank you for your assistance.

Sincerely,

BRYANT CRAWFORD, Jr.,
Chairman
Department of Industrial Arts Education

Approved by:

WILLIAM E. WARNER
Graduate Adviser
DIVISION OF INDUSTRIES
DEPARTMENT OF INDUSTRIAL ARTS EDUCATION

Dear

This concerns my dissertation at The Ohio State University in Columbus, the subject of which is "Industrial Arts Programs for Adults: An Analysis of Organizational Procedures and Practices with Implications for Adult Living."

I am in need of certain data which you may be able to supply that will greatly aid me in the progress of the study. Your program in the field of Adult Education has been selected as a source of information and I would appreciate your assistance. The findings should contribute to the improvement of these programs.

Please complete the enclosed form and return it in the self-addressed envelop herein, at your first convenience.

Thank you for your assistance.

Sincerely,

BRYANT CRAWFORD, Jr., Chairman
Department of Industrial Arts Education

Approved by:

WILLIAM E. WARNER
Graduate Adviser
Dear

This concerns my dissertation at The Ohio State University in Columbus, the subject of which is, "Industrial Arts Programs for Adults: An Analysis of Organizational Procedures and Practices with Implications."

I am hoping to visit the programs of some of my respondents and will appreciate the privilege of dropping in on you.

Please use the enclosed postal card to indicate an approximate date and time when such a visit would be convient to you.

Thank you for your assistance.

Sincerely,

BRYANT CRAWFORD, Jr., Chairman
Department of Industrial Arts Education

Approved by:

WILLIAM E. WARNER
Graduate Adviser
Dear 

While your program may or may not be one involving industrial arts for adults, there is a definite contribution that it can make to the study.

In a chapter entitled, "Exemplary Programs for Adults in the United States," we are concerned with urban and rural centers, both day and evening programs for adults.

In order to facilitate this study, I would appreciate it if your office would supply me with a sampling of any information material that describes your organization procedures and practices.

Thank you for your assistance.

Sincerely,

BRYANT CRAWFORD, Jr.
Chairman
Department of Industrial Arts Education

Approved by:

WILLIAM E. WARNER
Graduate Adviser
APPENDIX B

THE QUESTIONNAIRE
INDUSTRIAL ARTS PROGRAMS FOR ADULTS

A Dissertation by BRYANT CRAWFORD, Jr.
Central State College, Wilberforce, Ohio

PLEASE ANSWER WITH A YES OR NO, OR BY A SENTENCE

Program______________________________ Director______________________

Address_________________________________________________________________

City____________________________________ State_________________________

I. NATURE OF THE PROGRAM (PLEASE CHECK ONE OR MORE)

A. Type of Adult Program Supervised

   Evening School
   __ Veterans Rehabilitation
   __ Community Center
   __ Community Sponsored
   __ Private Enterprise
   __ Rural
   __ Settlement House
   __ College or University
   __ Public Day School
   __ Other

B. Age Limits of Enrollment

   __ 13 - 24
   __ 25 - 34
   __ 35 - 44
   __ 45 and over

C. Main Objectives of Program

   __ Better Home Living
   __ Consumer Education
   __ Rural Life Education
   __ College or University Service to the Community
   __ To Combine Vocational and Liberal Arts Education
   __ Interest in Industry
   __ Appreciation and Use
   __ Self-realization and Initiative
   __ Cooperative Attitudes
   __ Health and Safety
   __ Interest in Achievement
   __ Orderly Performance
   __ Drawing and Design
   __ Shop Skills and Design
   __ Other, such as: ____________________________________________

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II. ORGANIZATION AND ADMINISTRATION OF ADULT PROGRAM

A. Date Program Established: ____________________________

B. Major Steps Used to Organize:

1. ________________________________________________________
2. ________________________________________________________
3. ________________________________________________________

C. Source of Support:
   - State
   - City or Local
   - Institutional
   - Student Fees
   - Private
   - Federal
   - Investments
   - Gifts
   - Tuition
   - Special Annuities
   - Endowments

D. Status of Building, Equipment and Supplies
   - More than Adequate
   - Adequate
   - Satisfactory, but in Need of Improvement
   - Inadequate

E. Budget Allocation (Check Group which Typifies Budget)
   - Less than $500
   - $500 to $5,000
   - $5,000 to $10,000
   - $10,000 to $25,000
   - $25,000 to $50,000
   - $50,000 to $100,000
   - $100,000 or more

F. Factors that Have Contributed to the Development of the Program, e.g., Gifts, Volunteer Services ...

1. ________________________________________________________
2. ________________________________________________________

G. Problems to be Resolved, e.g., Finance, Load, Credit

1. ________________________________________________________
2. ________________________________________________________
H. The Director is Employed
   Full time
   Part time
Teaches ______________ classes in addition to directing program

I. Source of Students
   Local School System
   Community at Large
   College Community
   Other, such as:______________________________

J. How is the Program Housed?
   In Its own Building
   In a Public School
   In a College Building
   In a Community Center or Settlement House
   In a Government Owned Building
   In a House or Private Building
   Other, such as:____________________________

K. Regular Staff Committees:
   1. _________________________________
   2. _________________________________
   3. _________________________________

L. Methods Used for Orientation of Staff
   Formal Instruction
   Discussion Groups
   Periodic Staff Conferences
   Staff Bulletins
   Workshops
   Individual Conference
   Other, such as:____________________________

M. Who Determines Regulations or Policies?
   School Board
   Board of Directors
   Trustees
   Department Chairmen
   Recreation Division
   Government Liaison
   Private Citizens
   Sponsors of Program

N. Location of Program
   Rural
   Urban
   Suburban
O. Affiliated Organizations, e.g., YMCA, Clubs, Labor Unions ....

1. ........................................................................................................

2. ........................................................................................................

P. As Regards Classes, Check the Following

--- Number of Weeks per Term
--- Number of Nights per Week
--- Number of Hours per Night

Q. Which of these are Used to Determine Programs?

--- Occasional Surveys
--- Survey of Students Enrolled
--- Requests of Individual and Groups
--- Educated Guesses
--- Advisory Committee or Council
--- Other, such as: 

R. Which of these are Used to Promote Programs?

--- Bulletins or Folders
--- Newspapers
--- Letters and Postcards
--- Recruitment by Staff Personnel
--- Radio and Television
--- Telephone Appeal
--- Window Displays
--- Open-House Exhibits
--- Handbills and Posters

S. If Advisory Group is Used, How Is It Composed?

1. ........................................................................................................

2. ........................................................................................................

III. CURRICULUM AND FEATURE OFFERINGS

A. Type of Program

--- Literacy
--- High School Subjects
--- College Preparatory
--- Technology
--- Industrial Arts
--- Trades and Industries
--- Do-It-Yourself Projects
--- Rehabilitation and Therapy
--- Recreational and Leisure-Time Pursuits
--- Aesthetic Interest in Handicrafts
B. New Courses Offered This Year
1. 
2. 

C. Courses Most Frequently Elected or Requested
1. 
2. 

D. Enrollment
1. Total
2. Industrial Arts

E. Types of Student Organizations
   - Social Club or Committee
   - Special Projects
   - Promotion Group
   - Student Council
   - Community-Centered
   - Study Group
   - Church Club
   - Arts Club
   - Foreign Group
   - Program Committee

F. Method Employed in Organizing these Groups
   - Choice of Students
   - Administration
   - Department Responsibility

G. Counseling Services and Techniques Employed
1. 
2. 

H. Projects Sponsored, e.g., Exhibits, Guest Artists...
1. 
2. 

I. Student Receives
   - Certificate
   - Diploma
   - Grade
   - Apprenticeship Rating
   - Journeyman Rating

J. Follow-up Activities Show that
   - Go into other Jobs
   - Improve Homes via Do-it-Yourself
   - Continue Training
Finish High School
Go to College
Pursue a Trade
Recover from Disability
Develop Finer Recreational Skills
APPENDIX C

ADULT RESPONSES
INDUSTRIAL ARTS PROGRAMS FOR ADULTS

A Dissertation by BRYANT CRAWFORD, Jr.
Central State College, Wilberforce, Ohio

ADULT RESPONSE

OCCUPATION

DIRECTIONS: The following questions may be answered by placing a check mark in the space following the answer chosen.

YOUR AGE: 20-29____ 30-39____ 40-49____ 50-59____ 60-69____

MALE____ FEMALE____ MARRIED____ SINGLE____

1. Do you have children in school? Yes____ No____

2. Are you a high school graduate? Yes____ No____ Yrs. in high school____

3. Are you a college graduate? Yes____ No____ Yrs. in college____

4. Did you ever take shop classes in high school? Yes____ No____

5. Have you ever attended a trade or vocational school?
   Yes____ No____ Public____ Private____

6. What are your reasons for enrolling in this shop class? (Please mark order of preference (e.g.) 1, 2, 3, 4, 5). . . . .

   1. For recreation____
   2. Learn a hobby____
   3. To associate with others____
   4. To learn general and technical shop information____
   5. To learn to use tools____
   6. Other____________________________

7. Why do you want to learn to use tools or work with tools and shop materials?

   1. To make home repairs____
   2. To make things at home____
   3. To make articles for the home____
   4. Other____________________________
8. Are you planning to enroll in any future shop classes for adults?

Yes  ___  No  ___  Undecided  ___  If yes, why? __________________________

9. If you had a choice of the following, which ones would you select?
(You may check as many as five)

Woodworking  ___  Mechanical drawing  ___  Plastics  ___
Carpentry  ___  Welding  ___  Leatherwork  ___
Upholstering  ___  Blueprint reading  ___  Weaving  ___
Wood finishing  ___  Auto mechanics  ___  Jewelry  ___
Machine shop  ___  Home mechanics  ___  Ceramics  ___
Sheet metal  ___  Electricity  ___  Photography  ___
Plumbing  ___  Radio and T.V.  ___  Art metal  ___

10. Who should pay the expense for evening shop classes?
(e.g.) salaries, supplies . . . .

The school should pay all expense ______________________
Members of the class should pay all expense ______________
Expense should be divided between the school and the class members ____________

11. Should shop classes be offered to adults in:

Fall  _____  Winter  _____  Spring  _____  Summer  _____  Entire Yr.  _____

12. List electric power tools in your home?
1. ________________________________
2. ________________________________
3. ________________________________

13. Check power tools you have used in this shop.

Circular saw  _____  Wood shaper  _____
Jig saw  _____  Metal shaper  _____
Band saw  _____  Wood jointer  _____
Wood lathe  _____  Sanders  _____
Metal lathe  _____  Drill press  _____

14. Did you know how to use these tools before you enrolled?

Yes  ____  No  ____
15. Please list any comments pertaining to evening shop programs for adults?

1. 

2. 

3. 

APPENDIX D

STAFF INTERVIEWS
INDUSTRIAL ARTS PROGRAMS FOR ADULTS

A Dissertation by BRYANT CRAWFORD, Jr.
Central State College, Wilberforce, Ohio

STAFF INTERVIEW

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<tr>
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</table>

I. ADMINISTRATION AND SUPERVISION

A. Who initiated the program? School__Instructor__
   Others__

B. Did the people request shop classes? Yes__No__

C. Was a community survey made? Yes__No__

D. What year was the program initiated? _______ Course____

E. Can adults enroll in class at any time? Yes__No__

F. What enrollment was required to start a class? _______

G. What are the fees charged for each class? _______

H. Do you give high school credit for shop classes? Yes__No__

I. Who is liable for injuries? School______ Adults______

J. Who pays for damaged equipment? School______ Adults______

K. What salary is paid for class instruction? Per Hour______

L. What preparation have the instructors?
   College degree_____ Master's degree_____ No degree_____
   Tradesman_____  
   Major in College? Industrial Arts_____ Vocational Ed_____
   Others_____
M. List your sources of assistance?

________________________________________________________________________

________________________________________________________________________

II. TEACHING METHODS AND PROCEDURES

A. Check the items that are relative to nature of your course work.

Yes No

1. Organized course of study

2. Hold regular class demonstrations

3. Organized class lectures

4. Regular textbook assignments

5. Are textbooks: Technical

Professional

Title of text used

6. Give individual instruction as needed

7. Other

B. How are supplies obtained for adults?

Comment

________________________________________________________________________

________________________________________________________________________

C. Do adults utilize the shop library?

Comment

________________________________________________________________________

________________________________________________________________________

D. Do women consume more instruction time than men? Yes ___ No ___

E. How do you start each new class?

Comment

________________________________________________________________________

________________________________________________________________________
III. INFLUENCE OF EVENING PROGRAM ON DAY PROGRAM

A. List problems encountered in conducting evening adult programs.

1. ______________________________________________________

2. ______________________________________________________

3. __________________________________________________________________

4. _________________________________________________________________

B. Have evening classes facilitated your obtaining materials or supplies which are also used for day classes? Yes____ No____ In what way? ____________________________

C. Have any evening students donated supplies or equipment? 
Yes____ No____ What? ______________________________________

D. Indicate if there are any conflicts between evening and day classes?
Comment: ____________________________________________

E. Are day students permitted to work in evening shop sessions? 
Yes____ No____ What are their activities? ________________________
APPENDIX E

USE OF THE WOOD INDUSTRIES CLINIC
<table>
<thead>
<tr>
<th>UNIT</th>
<th>PREDOMINANT SKILLS INVOLVED</th>
<th>TASKS PERFORMED</th>
<th>TOOLS AND EQUIPMENT USED</th>
<th>PHYSICAL REQUIREMENTS</th>
<th>MENTAL REQUIREMENTS</th>
<th>APPLICATION TO REHABILITATION</th>
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<td>Ability to follow</td>
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<td>Arm Rotation</td>
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<td>Simple Attention</td>
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**SAFETY**

Short discussion on Safety. Point out that hand tools will be used only after the patient has been instructed as to their proper use.

Power Driven Machinery will not be operated by patient without first obtaining permission from the Therapist and then not until the patient has been thoroughly instructed as to the safety precautions which must be followed and has demonstrated his or her ability to follow such instructions.
I, Bryant Crawford, Jr., was born in Meridian, Mississippi, on June 29, 1920. I received my undergraduate training at Tuskegee Institute, Alabama, and Central State College, Wilberforce, Ohio.

From Columbia University, I received the Master of Arts degree in 1951. While there during the year 1950-51 I was assistant to Professor Norman Cherner. In September 1951, I was employed in the Industrial Arts Department at Central State College and was appointed Chairman of this department in March 1957 where I have taught until the present time.

I have majored in industrial arts education; my minor areas are higher education, adult education, and trade and industrial education.