SUPERIOR PRACTICES IN THE ADMINISTRATION
OF INDUSTRIAL ARTS TEACHER EDUCATION

A Study of the Attitudes of Leaders Toward Derived Standards with Reference to the Projection of an Administrative Program for California

A 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 past thirty years has witnessed many developments in the administration of industrial arts education. This activity has been quite independent in many parts of the country. The result has been a variety of policies and practices.

The emergence of these many policies and practices, often divergent, has stimulated a curiosity concerning what could be considered a set of standards for the administration of certain phases of industrial arts teacher education.

Any study of this type depends for its success upon the cooperation of many individuals. While specific mention has been made concerning many of these in the body of the dissertation, one is indebted beyond what words of acknowledgment can repay. The writer is pleased to express his sincere appreciation for the help and example of his major adviser, Dr. William E. Warner, and the other members of his committee, Dr. Earl W. Anderson, Dr. Fred Staub, and Dr. Robert M. Reese, for their constructive aid during the study. Finally the writer is most grateful for the suggestions of his professional associates, many of whom were broadly experienced in the field of administration.

LESLIE EARLE STEPHENSON
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Part I
INTRODUCTION

Chapter I

DELINEATION OF THE PROBLEM

...science and technology have in recent years grown so rapidly that the remaining cultural arrangements now fall behind in failure to make adequate and just use of the possibilities thus offered. We need institutional changes. Perhaps the acutest lag of all lies in the failure of social thought and moral effort to grapple adequately with these new conditions and possibilities. Meanwhile our civilization suffers.

William H. Kilpatrick (80, p. 13)

During the past 30 years the problem of industrial arts teacher education has been approached from many sides. In 1928, Dr. William E. Warner (151) of The Ohio State University, published a book on, Policies in Industrial Arts Education. It was a study based upon an analysis of the institutions preparing industrial arts teachers for the public schools and the policies relating to their preparation. In 1936, Lawrence F. Ashley (11), former graduate student, The Ohio State University, conducted a similar study, entitled, Industrial Arts Education, A Study of Programs in Undergraduate Teacher Education. Some of the recommendations of these studies have led the writer into the study of the organization and administration of
industrial arts education, a facet of the field closely related to policy.

**Statement of the Problem.** Administrators constantly seek guidance in their drive for progress. They are concerned by the many ideas concerning the aims, nature, and scope of industrial arts education. It was attempted in this study to provide a practical aid in clarifying these points through a review of the administrative beliefs of certain leaders of industrial arts undergraduate programs in the colleges and universities of the United States.

The problem to be considered in this study pertains to the derivation of superior administrative practices, utilizing the literature of higher education, and to the attitudes of leaders toward these derivations. Consequently the title of the study is **Superior Practices in the Administration of Industrial Arts Teacher Education, A Study of the Attitudes of Leaders toward Derived Standards with Reference to the Projection of an Administrative Program for California.**

A few lines extracted from Warner's invitation (148) to industrial arts teacher educators to attend the 1939 National Conference on Industrial Arts Teacher Education will help present the role which administration should play in the American program of industrial arts.
The responsibility for progress in industrial arts education can be laid directly at the door of the colleges, and universities engaged in the preparation of industrial arts teachers. The professional personnel of these schools need more than ever to appraise their policies and programs in terms of economic and social shifts that so strongly call for educational reorganization on every hand.

The tendency to drift is recognized in the literature but the responsibility of departmental executives for a reorganization of administrative practices through the integration of basic principles is also recognized.

This is largely a study of the standards of organization and administration of industrial arts education and demands an initial over-view or survey approach, which includes-

1. A resume of the historical development of the organization and administration of higher education for the purposes of
   a. determining the significant changes in organization and administration since their first conception.
   b. ascertaining the attitudes of leaders in the field toward organization and administration.

2. A resume of the historical development of industrial arts for the purposes of
   a. presenting the reader with a brief overview of the program.
   b. describing significant changes which have affected the program during the past half century.
This entire study is postulated on the belief that the solving of educational problems requires an investigation of leaders' attitudes and experiences, and that

1. confusion in contemporary administration of industrial arts education can be traced partially to conflicts among the thinking which governs specific administrative acts of the departments.

2. there exists, in spite of confusion and conflict in American higher education, a tendency toward a consistent type of viewpoint among theorists and administrators who contribute to the literature.

3. the demonstration that by an application of scientific procedures the elements of this integrated philosophy could be constructed from the writings of accredited leaders in the field of higher education.

The study is concerned with the finding of the most desirable and appropriate practices in a given area. It is probably true that defects and conflicts will be found in the practices which have been studied, but these will be considered as a challenge and stimulation for the projection through systematic reflection of better ordered and more inclusive practices.

It is assumed throughout the study that college authorities hold the power of review of the acts and decisions of the departmental administrators and the statement of each practice is considered to include, tacitly, the phrase, "subject to the confirmation of the central college authorities."
Purposes of the Study. It is one of the purposes of this study to discover any central tendency toward a consistent type of viewpoint among administrators in the field of industrial arts education. The pressure of new ideas and hypotheses has caused administrators who see good in the old theories, and those who are afraid to tread new ground, to entrench themselves as strongly as they can against the invasions of new practices. Dr. Harold Coffman (71, p. vii), former President of George Williams College, Chicago, recognized this in his introduction to The Problems of Higher Education:

College administrators have not been overly enthusiastic in their acceptance of the new theories, partly for the reason that they find them disquieting. That which undermines tradition, questions established practices, or annihilates one's pet theories, is not likely to be received on first acquaintance.

The other purposes of this study were-

1. To present a modern-day viewpoint with reference to industrial arts and to show its application to administrative effort on behalf of industrial arts education.

2. To develop a valid list of practices to serve as an administrative guide in the development of programs of industrial arts teacher education. It was the intention that such practices be in harmony with a basic democratic philosophy of education which emphasized industrial arts, that they be based on the professional results achieved
by institutional programs of industrial arts. Also it was intended that they be guiding and suggestive, rather than restrictive; and that they recognize the right of each institution to formulate its specific purposes and to design its particular organization to meet the local needs within its boundaries. These principles should be used as a starting point of origin with regard to the improvement of departmental programs of industrial arts education.

3. To study those administrative practices considered to be superior in order that they might be of value in strengthening the administrative efforts of industrial arts teacher education departments in the United States and specifically within the State of California.

4. To stimulate continuous research with regard to the organization and administration of industrial arts education in an effort to improve them. It was hoped that the industrial arts profession may be made conscious of good administrative effort and be stimulated to greater professional achievements.

**Ultimate Consequences of this Study.** It is expected that this study will be made available to administrators of industrial arts education programs since more than 100 leaders have directly or indirectly contributed to the information contained herein. Consequently, some of the ultimate results which may be hoped are-
1. The development of better attitudes on the part of college authorities toward the administration of industrial arts teacher education programs.

2. Increased stimulus for self-surveying and departmental analysis on the part of industrial arts staff members.

3. The direction of industrial arts education staff members toward the broader phases of departmental organization and administration.

**Limits of the Study.** This study is limited to those practices of internal administration pertaining to instruction and personnel found in the undergraduate industrial arts education departments of colleges and universities in the United States. This means that the overall financial and business affairs of the departments are not discussed. However, the formulation and execution of the departmental budget and the allotment of financial aid to students are clearly educational functions that come within the limits set for the study.

The use of the literature of higher education as one of the sources of material for the study constitutes a limitation of major importance. Thereby administrative practices which enter into the study are limited to such as have been discovered by administrators and students of higher education, or derived by logical processes from
the discussions of administrative practice. The written statements of these experts are, in general, their carefully considered and reconsidered opinions of administrative practices and hence constitute a valid statement of the practice actually underlying administration of industrial arts departments in the various teacher education institutions in the United States.

Probably the most important limitation of the study is made by confining it to one of administration. Narrowing the subject matter to the administration of instruction and personnel eliminated from the study the materials and methods of instruction and guidance. Although administration has for its chief aim the facilitation of the work of instruction and personnel, an investigation of administration may not concern itself with instruction and personnel work, except as reference to them is necessary and incidental to the study of their direction and control.

Narrowing the study further to internal administration presents the necessity of carefully defining internal administration. One must note what internal administration shall include. The dictionary, the administrators themselves, and the literature of higher education use the term "administration" not only in the sense of the activity of the institution concerned in the exercise of its legislative, judicial, and executive powers, but also
in the sense of the persons collectively who are entrusted with the direction and control of institutional affairs. Therefore, when the term is used in the second sense, it is necessary to point out what individuals and what groups of individuals, and under what circumstances each of these is to be considered as part of the internal administration.

Simply stated, "internal administration" is the administration of the internal affairs of the department. The internal affairs pertain to the personnel and the material resources of the department. Internal administration pertains also to theories concerning these elements, with the ideals for which the institution exists. It is concerned with the organization of these elements, with their direction, and further, with their coordination to the end that the educational process may operate more effectively. It pertains then to the formulation, execution, and interpretation of departmental policies. It endeavors to organize and carry out all the details necessary to put into effect the departmental policies.

Internal administration exercises immediate control over the department as opposed to the ultimate control vested in the governing board, in church boards, and in legislatures, and various external influences which will be mentioned later.

The limitation of the study to the consideration of practices, that is, certain theories of administration,
is also of major importance. The attempt to discover what is being done in various institutions is extraneous to the study. The study is concerned with the theories underlying direction and control of the educational process and only incidentally, if at all, with the devices and means of administration.

Methods and Techniques. In this study it was endeavored to examine critically statements pertaining to internal administration found in the literature of higher education. The statements, expressed or implied, were extracted from the literature, the process of extraction being carried out as long as further extractions seemed likely to furnish statements distinct in essential content from those already collected. From these statements a list of administrative practices was developed which expressed the content of the extracted quotations. The resulting statements were condensed into general statements of internal administration practices. This process of classifying or grouping together statements thus reduced their number and permitted them to be handled more conveniently. The quotations were investigated for consistency with each other, and if a considerable number of these statements were discovered, each of which possessed internal consistency, the attempt was made to state the administrative practice embodied therein, or implied by
each group of statements. All statements extracted were not necessarily acceptable. After this series of practices was developed, the list was sent to a jury of 39 leaders in the field of industrial arts for validation.

The 72 practices thus extracted from the literature represent complex ideas. The similarities between them are seldom strict identities and are of many different sorts. Therefore the process of condensation was difficult and at times very subjective. In this phase of the work it was necessary that great care be exercised at all times in order to preserve the original author's true meaning.

Dr. Boyd Bode (19, p. 85), late Professor of Education at The Ohio State University, argued that job analysis, when used on an activity where intelligence and judgment enter so largely as in the teaching process, must be used carefully, and too much must not be expected from it. Apparently job analysis can be used to furnish the data, or raw material, of a study, but it is necessary to go beyond this material for guiding principles. This limitation was not forgotten in this study.

Definitions and Descriptions. The following definitions or descriptions are presented to avoid the danger of presenting misunderstood terms which are closely allied and which are often used interchangeably.

Administration. The guidance, leadership, and control of the efforts of a group of individuals toward some common goal.

Curriculum. The systematic sequence of learning experiences which are arranged for the total college preparation of students.

Delineate. To describe, portray, convey clearly through the use of words.

Doctrine. That which is taught, a principle, or body of principles in any branch of knowledge. A principle accepted as authoritative

General education. Describes a broad academic, cultural, and liberal program. Courses in speech, English grammar, English literature, social science, economics, and history often afford a general education for the preparation of industrial arts teachers. Ordinarily, drawing, mathematics, and science are supporting fields and are considered a part of the major preparation.

General methods. The teaching problems, skills, and techniques which may be applied, in varying degrees, to teaching of all kinds.

General shop. A school shop for industrial arts equipped to afford experience and learning in more than one of the major areas of industrial arts.
Industrial arts. A phase of general education which provides the student with experiences, appreciations, and understandings of tools, materials, products, and processes of the technology.

Industrial arts education, industrial arts teacher education, industrial arts teacher preparation, and industrial arts teacher training. Terms used synonymously to describe the academic level of education dedicated specifically to the education of industrial arts teachers.

Industrial vocational education. A specific occupational training. The purpose of this program is to train students to earn a livelihood in a socially recognized occupational field.

Institution. Any school of higher learning.

Professional education. Used to denote that area of teacher education which gives the teacher the "How, Who, When, Where, and Why" of teaching. Professional education is concerned also with the "What" of teaching but does not attempt to develop knowledges and skills in field subjects.

Project method. Defined in terms of the common use of the word "project" in industrial arts. This method of teaching makes use of the project by individuals or by groups. A project may be assigned by the teacher, but for the most part it is chosen
individually by the students. It involves the use and manipulation of physical materials and tools, and, when finished, it represents a worthwhile accomplishment.

Teacher education, teacher preparation, and teacher training. Terms used synonymously to define a level of education, general in nature applying to the education of teachers of all kinds.

Technology. The science or systematic knowledge of the industrial arts, particularly of the more important manufacturing processes and the use of their products.

Chapter I has presented the delineation of the problem, why it is needed, and its limits. Methods and techniques of research were reported. Special terms were defined. Next the background of the study will be investigated. This program of inquiry and reporting will be the purpose of Chapter II.
Chapter II

BACKGROUND OF THE PROBLEM

The development of the theories of internal administration found today in institutions of higher education appears to be based upon the POSDCORD idea of Luther Gulick. Gulick (88, p. 22), former director of the Training School and the New York Bureau of Municipal Research, described the work of the chief administrator as part planning, organizing, staffing, directing, coordinating, reporting, and budgeting. It is seen that the term POSDCORD is a "coined" word designed to call attention to the various functional elements of administration. This idea is widely accepted in American textbooks concerned with public administration. However the origin of administration in institutions of higher learning was at least as early as 1202 with the establishment of the University of Paris which developed from connections with monasteries and cathedrals of the church.

Brief History of Educational Administration. The curriculum of the university had as its base the seven liberal arts as developed by the monasteries (61, p. 15). This system of curricular organization was changed very
little until about the eighteenth century (40, p. 281). Thus it may be seen that the departmental organization of modern institutions may be traced to the origin of university development.

The students of this time formed guilds or nations with corporations of leaders known as councillors, prerogatives, and with private seals. Later at Oxford the guilds called their leaders procurators and rectors (115, Vol. I, p. 313).

The professors banded together in faculties of which there were ordinarily four -- arts, law, medicine, and theology (115, p. 324). A dean was chosen by each faculty to represent it in university functions (115, Vol. II, p. 568). The deans and the private seal student guilds elected the rector of the university. He was ordinarily a professor but at the University of Bologna he was a student (136, p. 20). Many of the early universities of Northern Europe, which were patterned after Paris University, were faculty controlled while those in Italy were student controlled.

The universities obtained many special privileges from the civil and religious leaders. Some of these were the right to license teachers and select their own professors; the relief of all persons connected with the school from taxation; the right to convene special courts; and to teach and to suspend lectures in order to enforce
their privileges (69, Vol. I, p. 428). It is significant that universities often moved because certain wrongs were not righted. Apparently there were no vast physical plants then as are known today.

As the 17th Century began, the colleges of the universities of Oxford and Cambridge were the strongest elements of institutional organization. Each university was a collection of colleges, each of which was an undergraduate teaching institution (115, Vol. I, p. 65). The university was the seat of general control of the colleges and exercised the right to grant degrees (91, p. 45), but the colleges had absorbed most of the functions related to the control of instruction and discipline (115, Vol. II, p. 373). The professors did not retain control long at Oxford and Cambridge since this authority was soon vested in the "Council of Heads" of the colleges (91, p. xix).

The establishment of Harvard College in 1642 brought the English idea of higher education to America. In the original Charter by the Massachusetts Bay Colony to the Harvard College, control was vested in a lay board of overseers and in 1650 this lay board became a corporation composed of the college president, the treasurer, and five fellows (99, p. 281). Originally the fellows were instructors of the college but as time went by they were replaced by laymen, and control was never returned to the faculty or its representatives (99, p. 285).
Thus the corporation became the seat of the immediate control of the University (99, p. 160). From the foregoing statements it may be seen that the transfer of institutional control to an external board gave American university administration the precedent of external control and the establishment of the corporation, the executive of which was the university president. This type of administration is found in practically all institutions of higher education in the United States.

William Morrison (99, p. 90) wrote in *Three Centuries at Harvard* that there were no departments in Harvard until 1767 when the departments of metaphysics, logic, mathematics, natural philosophy, Latin, and Greek were created. The departmental organization of the modern American institution of higher education has developed by subdivision and addition as branches of the older studies grew in importance and the new forces in society drew the attention of the institution into new fields of interest.

Scholars who studied in German universities exerted influence in American universities for the German type of instruction. One of the most famous of these scholars was Henry Tappan who was President of the University of Michigan from 1852 to 1863. Tappan (54, p. 169) declared that the system of public instruction can never be complete without its highest form, and that after the undergraduate work must come professional studies and those more
extended in science, literature, and the arts which can alone lead to profound and finished scholarship.

Three famous German educational theories affect the principles and practices of administration in American universities of higher education today. These are (115, p. 4) (1) that the university is a laboratory for scientific research; (2) that instruction is aided by the research of the instructor and by an atmosphere of research, and research is aided in turn by the teaching activities of the instructors; and (3) that the faculty participate in institutional administration.

The first two theories provide German education with its peculiar nature, and their influence upon higher education in the United States can be seen in the sharp line which separated the college from the university in the mind of Daniel Gilman, former President of Johns Hopkins (110, p. 4) and in the suggestions of other American educators for strengthening the research character of university work.

The German professor derives his right to study and the right to teach from his devotion to truth. Higher education in the United States terms these ideas "academic freedom," a theory as old as the idea of the university. Lindsay and Holland (89, p. 458), writing in College and University Administration, said of academic freedom: "It goes back to the times of the first university. It goes
back further, when there were no universities as organized institutions, but simply groups of scholars associated by common consent."

It would not be accurate to state that the entire set of principles of American higher education are traceable to German sources but there are enough writings in existence to lead one to believe somewhat in this theory. For example, Dr. Fabian Franklin (110, p. 196), former Professor at George Washington University, in his biography of Daniel Gilman wrote, "The keynote of the German system was also the keynote of Gilman's conception of the university-to-be." Franklin (110, p. 227) also wrote, "The vital force of the university was directed in the main to building up in American of a true university - a university permeated by the spirit of the universities of Germany, with research as the center, the heart, of the whole organism."

There are those who hold with the view that the faculty should participate in the administration of the university, such idea having had its origin in the philosophy which maintains that the organization of an educational institution must express and give opportunity for development and transmission of democratic ideals. Dr. Jacob Gould Schurman (129, p. 22), former President of Cornell University wrote: "The German state furnished the funds for the operation of the institution, and except for the "light touch" of a minister of education, the
professors were their own board of trustees." He also said, "the faculties of our institutions should be given a similar status, were a similar opportunity for the development of a truly representative government to replace the idea of a business corporation hiring teachers, and controlling them by industrial organization instead of through an "intellectual organization."

There is considerable agitation today by some professors who desire more "say-so" in the administration of their institution. It is often amusing to observe these same persons after they have been appointed to some policy making committee "in addition to their other duties." Many are successful in their dual roles but the balance usually ask that they be returned to their old task of teaching without the pressures of performing administrative tasks.

**Expansion of Agriculture and Industry.** In the early years of our country the scope of higher education was limited to the conditions which existed along the Eastern coast. In general college education was focused upon religion and until the time of the Civil War there was little recognition of the need to discover the forms of higher education demanded by the people of the community. The industrial expansion brought on by the Civil War awakened higher educational institutions and the country
as a whole to the need of the people for agricultural and industrial education.

The educational programs offered by the scattered colleges in the United States at the beginning of the nineteenth century were entirely inadequate to meet the increasing demands for varied forms of higher education (25, Vol. II, Sec. 12, p. 8). These early colleges and universities trained wholly for five careers - medicine, law, politics, the church, and teaching. It is not surprising, then, that the farmer and mechanic should desire some educational consideration. Agitation for agricultural and industrial education began early in the century, with the formation of agricultural societies and plans for the establishment of agricultural and technical schools (41, p. 279).

The net result of the planning of these societies was to provide certain institutions with the opportunity to profit handsomely from the Federal Land Grant Acts of the second half of the century. These Federal Land Grants affected the work of the private institutions to a considerable extent; the extent not being fully determined as yet. In many states the funds of the older state university and the newly organized land grant colleges, when separate, and the older and classical curricula and the newer technical services, were combined in an institution and budgeted by the state legislatures. Because of its social
composition, the legislature was prone to favor the services sponsored by the land-grant act at the expense of those which composed the offerings of the colleges previous to the passing of the said act.

As was mentioned previously, the effects of this and subsequent legislation concerning higher education in the United States cannot be measured accurately. Actually most of the changes were in curriculum and of no significant interest in this study. However, some were changes in administrative theory.

One principle of internal administration of the institution of higher education may be traced in part to this period. That is to be responsible for meeting the needs for higher education of all cultural classes in the country, and provide educational services for groups which theretofore had been denied proper training.

The second theory is that of extension services or the duty of an institution of higher education to plan and arrange to carry educational opportunity to a widely distributed clientele.

The curricular changes brought about by the Land-Grant Acts have led to many new ideas concerning who should go to college and, with the older theories, have contributed much to the confusion in higher education.
Industrial Arts Since 1900. The years from 1900 to World War I were years of controversy between those who wanted to substitute "real vocational education" for manual training. A new emphasis was placed upon the importance of industrial practices in the school shops and an enriched teaching content of related material. These ideas were somewhat responsible for the greatly enriched form of modern educational shop and drawing work which has come to be called industrial arts.

In October 1904, Professor Charles Richards (123, p. 1), late Director of the Department of Manual Training at Teachers College, Columbia University, in an editorial in the Manual Training Magazine, suggested that the term "industrial arts" be substituted for the term manual training. He based his new term on the following statement:

We are rapidly leaving behind the purely disciplinary thought of manual training. . . . Now we are beginning to see that the scope of this work is nothing short of the elements of the industries fundamental to modern civilization.

Dr. Frederick G. Bonser (17, p. 454), late Professor of Education at Teachers College, Columbia University, in 1913 wrote in the School Arts Magazine that industrial arts was to be considered as both subject and method - an end and a means. He further stated that industrial arts, in order to obtain validity within the
school program, must justify itself upon the same basis as other subjects.

From this standpoint it will at once appear that primary emphasis will not be placed upon the production of industrial commodities, but rather upon intelligence and cultivated taste in their choice and use. In no single field will all of the children function as producers, but from every field worthy of study they will all function as consumers. The largest problems are those of developing an appreciative understanding of industry as it is at the present time, realizing its social problems and cultivating intelligent judgment and appreciation in the selection and use of industrial products.

Bonser (22, p. 187), believed in "problematic situations" rather than formalized courses in theoretical sequences. He wrote:

The experiences of the race, constitute the subject matter and content of education. The process of reliving these race experiences, through meeting them as problems to be solved much as the race has solved them, constitutes the method of education.

The term "industrial arts" has come to mean instruction in hand and brain work for general education purposes, whether formalized or not. Its meaning is essentially that of the older term manual arts, differing only in connotation. Charles A. Bennett (17, p. 455), late founder of the Manual Arts Press, and noted industrial education historian, said of the term industrial arts the "industrial" is emphasized, while in manual arts, the "arts" is historically the distinctive word. In the term manual training, "manual" is the significant word.
In the Swedish system the emphasis was on interests, attitudes, respect, self-reliance, orderly habits, and industry. The Russian system made use of the scientific approach to problem solving for scientific purposes. This was more in line with the present vocational education, that is, they analyzed the things to be taught, provided the necessary shop and equipment, developed the curriculum, and administered the program.

As mentioned previously, the concept of industrial arts came into existence around the beginning of the twentieth century. As early as 1888, however, Dr. Nicholas Murray Butler (26, p. 214), late President of the New York College for the Training of Teachers, said:

Industrial education is an education in which the training of the pupil's powers of expression goes side by side with the training of his receptive faculties and in which the training of both is based on knowledge of things and not words merely. Industrial education is not technical education though many persons confound the two. Technical education is a training in some particular trade, industry or set of trades or industries, with a view of fitting the pupil to pursue it or them as a means of gaining his livelihood. It is a special education like that of the lawyer or the physician. It takes for granted a general education and builds upon it as a foundation. Industrial education on the other hand is a foundation itself. It is the general and common training which underlies all instruction in particular techniques.

It is not the business of the public school to turn out draughtsmen or carpenters, or metal-workers, or cooks, or seamstresses, or modellers. Its aim is to send out boys and girls that are well and harmoniously trained, to take their part in life. It is because manual training contributes
to this end that it is advocated. We will admit, indeed I will distinctly claim, that the boy who has passed through the curriculum which includes manual training will make a better carpenter, a better draughtsman, or a better metal-worker than he who has not had the benefit of that training. But it is also true that he will be a better lawyer, a better physician, a better clergyman, a better tradesman, a better merchant—. . . . Manual training is in accord with the aim of education.

Manual Training was a term being accepted throughout the United States to describe school shop handwork. In 1900 an entire issue of the Teachers College Record was devoted to the manual training being done at the Horace Mann School (137, Jan.).

Two separate factors merged to give impetus to the movement to put industrial arts in the public schools. According to Walter L. Harvey (137, p. 12) in 1900:

1. The Industrial Education Association was organized in 1884 as a result of a dissolving of a philanthropic association dedicated "to promote the domestic industrial arts among the laboring classes, to diffuse true principles and correct methods and to establish a center of reference and consultation."

2. President Henry Barnard of Columbia College was most receptive to industrial arts for general education purposes.

This new enterprise gained the full support of the people of New York and began to receive national attention as well.

As soon as Nicholas Murray Butler was elected president of Teachers College a new era in the history of education began. He was elected because of his ability
as a teacher and not because of his administrative ability although his job was to organize a new teacher education college. Dr. Butler received much advice from Dr. Barnard, President of Columbia College, who was also being asked to introduce teacher education at that college. During 1886 the two men discussed the practicability of coordinating their efforts in the establishment of a teachers' college. As a result of these talks the College for the Training of Teachers was established in the fall of 1887.

Charles R. Richards (92, p. 45), took an interest in developing the curriculum for the manual training being taught at the Horace Mann School. The shopwork taught at that school, while called manual training, was indicative of present day industrial arts. Richards evidently felt that this new form of education was going to have considerable impact upon elementary and secondary schools. He expressed his attitudes concerning industrial arts at the annual convention of the American Manual Training Association in 1889. He felt that these manual training schools would become more technical in nature so that they could better serve the technical school.

If this is the chief, or even one of the chief, functions of secondary education, then it follows that the high school must afford a wide range of opportunity through a variety of studies and occupations. Indeed, it must insist upon each pupil having a rich and varied course. Especially is this true for the first two years or more; otherwise, how can a pupil be sure to discover himself? How can he discover that he was meant
to serve any particular one of the great divisions of human activity until he has tried such activity, or at least has obtained some knowledge of its rudimentary forms.

It is apparent that Richards was not correct in his forecast for manual training. This can be verified by studying the development of the manual training schools in St. Louis, Baltimore, and other cities.

G. Stanley Hall (63, p. 194), noted writer of the early 1900's, said that too little time was being spent on general education by vocational schools and that drill was being over emphasized. He also had considerable criticism for the projects being made in manual training schools:

There are now two chief kinds of manual training, very distinct in idea, plan, and scope. First, those just described and all others where work is carefully graded as to stages of progress and perfection; where exactness and finish are required; those devised for the sake of tools in order of difficulty passing from them to machines; those where great stress is laid upon the order of material worked with--paper, clay, wood, iron, etc.--in all these the finished product is either of no use or of very little, but the models are arranged according to the grades of difficulty...

From this point of view, I for one, believe that our manual-training high-school work is too mechanical; that it does tend a little too much to make joiners and cabinetmakers in its wood side and machinists in its metal work. To be really liberal, the hand must simply be used as an instrument for opening the intellect.

There can be little question that Hall had influence on the development of the objectives of industrial arts as they are known today.
It was mentioned earlier that Richards used the term industrial arts for the first time, in so far as the recent concept is concerned. However, the words had been used before in a different frame of reference. The Industrial Arts League of Chicago (18, p. 34) had been formed several years before Richards used the term.

The aim of the league was fourfold: (1) to provide workshops and tools for the use of guilds of artists and craftsmen, and means for the exhibition and sale of their products; (2) to give instruction in the crafts; (3) to establish industrial art libraries and museums; and (4) by publication and other appropriate means to promote the arts and crafts.

A conference on manual training was held at the Bradley Polytechnical Institute in February 1904, during which the word art as it applies to industrial arts was mentioned. During the conference the proposal was made and adopted that an Illinois Manual Arts Association be established. This association had much influence on the early history of industrial arts in that state. Possibly this use of arts by this organization had some influence on Richard's new term.

During the next 20 years many organizations were established in the cause of fostering industrial education. The actual purposes of each varied in relation to the interest of the localities represented. Some of those supporting industrial education for general education purposes were the (1) Detroit Manual Training

Manual training continued to flourish until 1920 at which time many normal schools and teachers colleges introduced industrial arts teacher education programs.

In 1925 the Vocational Education Association of the Middle West and the National Society for Vocational Education merged to form the American Vocational Association. This latter association has always maintained a department of industrial arts.

The Manual Arts Conference of the Mississippi Valley has been a strong proponent of industrial arts since its beginning. Within recent years the American Industrial Arts Association and the American Council on Industrial Arts Teacher Education have come to the front as strong forces for the advancement of industrial arts.

The field of industrial education embraces two areas, industrial arts and industrial vocational education. These have been in evidence throughout the
development of industrial arts. The former has been that phase of industrial education which contributes to general education. The latter has stood for specific training for a specific job in some industrial situation. One can see, therefore, that there cannot be a general industrial vocational education program. When the industrial education program becomes general, it becomes industrial arts. Dr. Arthur B. Mays (93), Professor Emeritus of the University of Illinois referred to the fact some educators have, for quite some time, attempted to establish some generalized form of vocational education to facilitate administration.

Gradually through the 100 years reviewed, the concept of education as consisting of two major aspects, both essential and mutually dependent, came to be accepted by most educators. These two aspects—general and vocational—it is now generally agreed, must be provided for all who need them, by some means. Increasingly the relationships of these two phases of every individual's education has become clear to most educators. That general education provides essential elements of vocational success and vocational education contributes to the development of personality and general understanding necessary for successful social adjustment finally also seems generally understood by educators. By the close of the period studied most leaders in general education had come to be interested in establishing a relationship between vocational and general education which would be most conducive to the realization of the most desirable outcomes of both.

Mays apparently felt that these two phases of industrial education will be forever confused, one with the other. It is the task of both divisions to maintain
It appears fitting to end this section with a quote (21, p. iii) from one of the works of Bonser:

"It is not assumed that the last word has been said on industrial arts. As experience grows, conceptions will probably become more clear and practice may be expected to progress from good work to better."

**Diversified Laboratory Movement.** There have been many phrases used to describe the multiple activity shop but none have retained the overall popularity of the term "general shop."

Dr. Louis V. Newkirk (104, p. 15), Director, Division of Industrial Arts, Chicago Public Schools, in his text *Organizing and Teaching the General Shop*, defined the general shop as "Shops that are planned and equipped to teach two or more distinct types of shopwork at the same time under one teacher are general shops." For example, a shop which is equipped to teach metal work, woodwork, electricity, plastics, and drafting at the same time under one teacher is a general shop.

Newkirk's definition is probably the most simple in existence but seems to clarify the general shop concept without an overabundance of words.

Mays (95, p. 139), in an article entitled "Notes on the Historical Aspects of the General Shop," which
appeared in the 1950 issue of the Industrial Arts and Vocational Education Magazine, said:

Indeed, it seems clear that originally the general shop was little more than the industrial-education phase of the junior high school movement. The educational theories that brought about the birth of the junior high school also produced the demand for some kind of program of diversified shop experience for junior high school pupils.

Dr. G. Harold Silvius (131, p. 9), Head, Department of Industrial Education, Wayne State University, Detroit, reported in Teaching Multiple Activities that the reasons advanced by educators for the junior high school movement were the same as those which encouraged the development of the general shop; namely, (1) to hold students in school longer with a more interesting diversified program, (2) to focus more attention on individual differences and provide programs more nearly tailored to the needs of the individual child, (3) to provide greater variety of activities which in turn provides more opportunity for exploration, (4) to provide a more adequate program of educational and vocational guidance, and (5) to provide more suitable learning conditions for adolescent children.

There were many school systems which did not install general shops in the junior high schools, but established a variety of unit shops, many of which are still in existence. However, the majority have been converted to limited general shops where several major
activities are carried on based upon some one media such as wood or metal (131, p. 9).

Credit for the general shop concept at the public school level probably does not belong to one person. Dr. John Dewey (36, p. 418), former Professor of Chicago University and noted educator, in University Record, University of Chicago, 1886, wrote:

Fundamental activities are those connected with the home as the center of production, shelter, comfort, artistic decoration, and food supply. Hence, school work aims to center upon these activities and as far as possible, enable the child to produce them in a gradual, orderly and social way in his own experiences.

As a result of his writings, the University Elementary School of the University of Chicago conducted many experiments in the use of industrial arts at the elementary level.

Charles R. Richards (124, p. 8), stated with regard to hand work for the elementary school:

On the side of the pupil, handwork is a medium of expression in terms of form, color, and material; in its relation to social life, it is essentially a means of interpreting art and industry.

Another quality that demands consideration in this work, as a whole, is the need of variety in our materials and process ... no one kind of work or material is broad enough in its possibilities to adequately express, even in a meager way, the varied interest of school and out-of-school life, of boy and girl nature.

Dr. James E. Russell (126, p. 442), Dean of Teachers College, Columbia University, had the following to say concerning the manual training program:
For pedagogical purposes the material of most significance in the industries are (1) foods, (2) textiles, (3) woods, (4) metals, and (5) clays and other allied earth metals. My conclusion is that industrial education is essential to social and political well-being of the democracy. It is the privilege of all, rather than the duty of a few, to be informed on matters affecting the social welfare of the body politic. A knowledge of how men get a living, the nature of the work, and the value of it, is a prerequisite to the intelligent appreciation of the dignity of labor. A sympathetic understanding of the conditions underlying industrial competition will make for a civil order and social stability.

It can be seen that none of the leaders of that time specifically mentioned a general shop concept but they did infer programs based upon more varied content.

The general shop concept took root between the years 1906-1917 when Bonser conducted the first general shop course at State Teachers College in Macomb, Illinois in 1906, by rotating the students through experiences in shop, drafting, and home economics. Bonser (20, p. 145) described his actions in Macomb:

The work under each (unit) is divided into subject matter and projects. Projects are illustrative of processes of manufacture. Their design involved a careful study of the principles of design. Processes of construction involve not only hand production but a study of power machinery, factory production, and transportation. The social aspects of the subject include studies of the sources of materials, markets, the conditions of laborers, and relation of employers and laborers, and these to consumers.

In the various lines of manual training work, possibly little more than capacity for manipulative skill may be revealed, but in the enriched study of the problems, processes, and methods of industrial and commercial design and production,
the varied capacities and interests involved in industrial and commercial occupations may be discovered and developed.

The city of Detroit, Michigan, seems to have played an important role in the development of the general shop concept when in 1913, John H. Trybon, Director of Vocational Education of the city public schools, directed that teachers would henceforth teach not only woodwork but other types of constructive work. This new content came to be electricity, metal work, lock maintenance, and furniture repair. This new content was taught for approximately three years during which time a Detroit public school teacher, Earl L. Bedell (16) analyzed the students' needs and found they centered about the home. In 1918 a "Household Mechanics" shop was established at one of the local schools, the curriculum resulting from Bedell's study. The program was so successful that teacher education institutions began courses immediately for prospective teachers.

In 1917 George Buxton, late Professor at The Stout Institute (now Stout State College), Menomonie, Wisconsin, presented a discussion at the Manual Arts Conference which concerned his views on exploratory industrial arts from the seventh through the 10th grade. He had in mind twenty separate courses spread throughout the four years.
During this same period L. H. Weiser (153, p. 47), early advocate of elementary school industrial arts, reported that he was teaching a course at the Horace Mann School of Columbia University; the content of which embraced clay, metal, textiles, wood, paper, and printing.

During the years 1906-1914 one other man, probably the most progressive of all the early general shop advocates, Ira S. Griffith, a literary college graduate as well as a journeyman carpenter, developed a very successful grammar-grade industrial arts program. Bennett (17, p. 443) remarked concerning Griffith's program:

Mr. Griffith had been a college professor of mathematics before teaching manual training, and continued with work in educational psychology, history of education, and methods of manual instruction. He was an enthusiastic believer in the educational possibilities of manual training, and an understandably successful teacher of boys. In a very few years, he developed work that attracted nationwide attention (Oak Park, Illinois). He assumed that "grammar-grade wood-working has a subject matter" of its own. He believed that in the grammar grades of public schools, "for economic reason," "classes of considerable size must be cared for." He believed in class instruction and in organizing subject matter so as to make class instruction as effective as possible. In teaching mathematics, he had learned the value of a textbook. He asked for a textbook. As there was no satisfactory one available at that time, he wrote one, Essentials of Woodworking... He considered that both the Russian and Swedish systems had overemphasized the value of skill and that certain psychologists had placed too much emphasis on the value of thought element to the neglect of the value of skill. His constant aim was to give instruction that would balance these two elements.
He organized his course of instruction by arranging problems in groups. It included the making of working drawings and the study of and reporting on definite related information assignments. After experimenting, he concluded that he could secure the best results in the year's work by having the pupils devote the first twelve weeks entirely to making drawings which they would use during the remainder of the year. Care was taken by him to have the pupils work on well-designed objects and to gain a little experience especially the study of proportion and the designing of contours and of surface decoration. He convinced many schoolmen that manual training could be correlated with other school studies and could have educational value equal to the best of the others.

The general shop concept spread rapidly after World War I and in 1921, Ira S. Griffith, who was then Chairman at the University of Wisconsin requested William E. Warner to install a general shop in the University of Wisconsin High School. This he did and taught therein with considerable success until 1924 after which time he began additional experiments with this concept at The Ohio State University. Warner recognized that his success depended upon organizing and operating the program along industrial lines and that the context of his problem involved more than a "shop." He therefore changed the name of the "general shop" activity at The Ohio State University to Laboratory of Industries in 1929 and enriched the curriculum consistent with the idea. He also recognized that in order to reflect the technology he must involve consumption as well as production and after several new approaches to industrial arts curriculum organization were tried, the
new title, Laboratory of Technology was adopted after World War II.

More recently, or as of 1956, Warner (147) has referred to this program as the "Vestibule Laboratory of Technology."

In 1925, Dr. Edwin R. Snyder (134, p. xii), former State Commissioner for Vocational Education in California, explained the move to have industrial arts based on community occupations:

It was reported that there is . . . a radical change in the ordinary manual training laboratory which as a rule is devoted almost solely to woodworking. . . . It (the room) is to be provided with simple equipment for electricity, sheet metal, woodworking, cement work, auto repair, machine shop work, shoe repairing, and agricultural work . . .

The course in community occupations should be made available to pupils of the seventh and eighth grades as well as all high school grades.

As early as 1925, the trend of shopwork in the small towns of California was definitely in the direction of community mechanics type of work. The tendency now is to make a study of the community to discover its needs before planning a shop course for its school or a shop room or building for housing the work.

In 1927, Maris M. Proffitt (144, p. 9), former Specialist for Industrial Arts in the United States Office of Education, reported that between 1924-26, 40 per cent of the 1,500 schools reporting had inaugurated a general shop; one-fourth of those with the general shop had established them during this two year period.
Nearly all of the 204 institutions of industrial arts teacher education have some type of course in which the theory and organization of the general shop are emphasized. However, the most advanced general shop concept apparently remains as the Vestibule Laboratory of Technology at The Ohio State University.

The Associations. Personnel in the field of industrial arts have two true industrial arts associations at the national level to which they may belong. These are the American Industrial Arts Association with some 5500 members and the American Council on Industrial Arts Teacher Education which has approximately 460 members.

American Industrial Arts Association. The period from 1933 to 1939 was an era of rapid transition for industrial arts since it proceeded from the barest essentials of organization to a national association with superior leadership. This transcendence was due largely to the efforts of William E. Warner, and his graduate program.

In 1933 industrial arts was occasionally considered as a luxury rather than as a necessity, and at the best was considered a special subject, for the basement and for those students lacking academic interest. There was no national organization or Federal subsidy comparable to the Smith-Hughes funds for vocational education. According to
Dr. John A. Whitesel (155, p. 108), Professor of Industrial Arts Education, Miami University, Oxford, Ohio, state associations had annual meetings but, being inactive during the rest of the year, had almost no contact with other general education organizations.

National sponsorship was important to Warner, but there is little evidence of anything other than an attitude throughout the profession of "let George do it." Literature of the profession in recent years has made frequent reference to the existing confusion as to nature, aims, and scope of the program. Even the leaders were sometimes in disagreement. Consequently industrial arts as a profession received little recognition from either the National Education Association of the United States Office of Education.

It became apparent by 1933 to the graduate seminar under the direction of Warner at The Ohio State University that a critical situation existed. The federally subsidized program of vocational education was overshadowing the general education program of industrial arts and its leaders were leaving the profession in ever increasing numbers for positions in the subsidized programs. The action seemed to be without merit since the depression created no demand for skilled personnel and was rather calling for a broad, exploratory type of education which could be provided by industrial arts and
which would provide the student with a sound background for vocational choice when the moment arrived and until that time for increasing the use of leisure.

The seminar group at The Ohio State University recognized that something must be done immediately to rescue many youth from the skill training of the Smith-Hughes program.

Out of this realization there developed in April, 1933, a conference with the United States Commissioner of Education concerning the need for fostering a program of industrial arts education. In 1934 a national conference was held as a result of the 1933 meeting and the "United States Office of Education Conference Committee on Industrial Arts Education" was appointed. Ohio had two members on this national committee, Warner, and Elmer W. Christy, former Director of Industrial Arts for Cincinnati, Ohio.

The former Assistant Commissioner of Education, Dr. Bess Goodykoontz (143, p. vi), had the following to say concerning this committee:

Educators and public-school administrators in particular have long felt the need for a statement, by persons actively engaged in the work, that interprets the place and function of industrial arts in the educational program. To meet this need there was appointed by the Office of Education, a committee of outstanding persons in this phase of education, a group whose knowledge of educational objectives and
educational practices would command the respect of leaders in the fields of school administration and educational philosophy.

The first meeting of the committee, in November, 1934, was devoted to discussing the problems involved, to outlining the work to be undertaken, and to appointing sub-committees responsible for the preparation of the first drafts of various sections of the present report. The final meeting was held in June, 1936, at which time the drafts of the sectional reports were read and criticized by the committee. In the light of the suggestions and criticisms by the group as a whole, the different chapters were revised and prepared as a unit report of the committee.

The committee's report, *Industrial Arts: Its Interpretation in American Schools* (143), was published in 1938 and won immediate national acclaim. It is significant to point out that the program as outlined in this document was founded upon Warner's thinking as outlined in *A Prospectus for Industrial Arts in Ohio* (107), published by the Ohio Education Association in 1934.

Warner perceived that the time was right to act in respect to formulating a policy for national leadership and issued an invitation to members of the industrial arts profession to attend a National Conference on Industrial Arts Teacher Education to be held in Cleveland, Ohio, in February of 1939. The idea of a national organization, when presented to the group in attendance, found ready acceptance. The 75 leaders at the conference formed the nucleus of the new American Industrial Arts Association and outlined a broad sponsorship program intended generally
to accomplish on a national scale, the type of program which had already been set in motion in Ohio.

The major objective of the new association under the leadership of Warner was to present and clarify the point that industrial arts was general and not vocational education. It was decided to identify the interests of the American Industrial Arts Association with those of the National Education Association. There were three significant steps taken to establish the association: (1) a membership drive, (2) the sending of representatives to National Education Association conventions, and (3) sponsorship of several professional pronouncements intended to present and clarify leadership problems.

When the National Education Association convention was held in San Francisco in July 1939, the American Industrial Arts Association sponsored several addresses by such noted personages as Dr. John C. Almack of Stanford University; Dr. Aubrey A. Douglas, Chief, Division of Secondary Education, California State Department of Education; Dr. Maris M. Proffitt, Specialist in Industrial Arts Education, United States Office of Education; and Dr. John T. Wahlquist, University of Utah, currently president of San Jose State College, California.

In 1940 when the National Education Association held its convention in Milwaukee, the American Industrial Arts Association sponsored a group of seven speakers,
representative of the recognized leadership in general education. Consequently the American Industrial Arts Association has contributed to the future of industrial arts at each National Education Association Convention since 1939 and at its own national conventions which are held each year in different geographic locales.

Since the American Industrial Arts Association is relatively new it is impossible to judge its influence, however, the nature of its program, the professional stature of its leadership, and the character of its publications would seem to indicate an exceptionally fine future.

American Council on Industrial Arts Teacher Education. This organization was proposed by a group of industrial arts teacher educators at the annual American Industrial Arts Association Convention in St. Louis, Missouri in 1949. The idea was tabled at the time and brought up again the following year at Detroit, Michigan. At the close of that meeting the Council was formed with Dr. Walter R. Williams, Jr., at that time Head, Department of Industrial Arts, University of Florida as president.

The Council is a division of the American Industrial Arts Association which is in turn a division of the National Education Association. The Council holds its annual convention in conjunction with the American
Industrial Arts Association annual convention. During that time it sponsors a professional program with sessions tailored especially to the needs and problems of people engaged in teacher education in the field of industrial arts. The Council also sponsors the publication of a yearbook, seven of which have already appeared. These yearbooks are becoming highlights in the professional literature of the industrial arts field.

The objectives of the Council were—

1. To promote and improve industrial arts teacher education.

2. To improve the welfare of those engaged in and those preparing for industrial arts teacher education.

3. To provide opportunities for industrial arts teacher faculties to become better acquainted.

4. To sponsor a program of professional releases for the benefit of those engaged in industrial arts teacher education.

5. To conduct an annual conference on industrial arts teacher education.

The information presented concerning the American Council on Industrial Arts Teacher Education was extracted from personal correspondence with the Council's secretary, Dr. William F. Tierney, Professor of Industrial Arts Education, Maryland University, College Park, Maryland.
The Honorary Professional Fraternity Movements

1. Epsilon Pi Tau. The term "back-door-teacher" might be one well suited to the industrial arts teacher prior to 1929. He usually arrived at any academic meeting through the back door, hair containing a liberal sprinkling of saw dust, fingernails containing a generous portion of paint, and with an inarticulate manner of discussing his program when his time came to speak. He had no national Greek letter society to provide him with social or professional competency and often enough his schooling was so devoid of educational philosophy he was unable to cope with the instructors who had taken their degrees in the liberal arts. His skills were looked upon with awe by many of the academicians but his academic abilities were given no weight and in many cases this treatment was justified since he allowed even the manufacturers to dictate what tools and equipment he used.

Warner realized that this situation must be remedied and one method would be to organize an honorary professional fraternity.

The growth and influence of this now ranking, international, honorary professional fraternity for industrial arts and vocational education closely parallels the rise and spread of The Ohio State University's influence in industrial arts education.
The announcement of a national honorary professional fraternity, EPSILON PI TAU, was made in 1930, but its inception as outlined by Orville E. Sink (132, p. 5), in the 1930 EPSILON PI TAU REVIEW:

During the school year 1928-29, six or eight graduate students at The Ohio State University met each Wednesday evening as a seminar group. . . . At these meetings different topics relative to phases of industrial arts and vocational education were studied. Special attention was given to research in these fields. At one of these conferences the question of an honorary fraternity was raised. A preliminary inquiry revealed that a number of such fraternities were in existence. Their memberships were made up of teachers in industrial arts and vocational education. After discussion of the question at some length, the group thought that our purpose would best be attained by organizing a fraternity, with a different professional emphasis than any of those then operating. It was naturally hoped that an organization might be formed which would become national in scope and take rank with the best educational, honorary fraternities now organized in general and other fields of education.

Sink (132, p. 5) continued relative to the purposes of the new fraternity:

As a foundation on which to work, the group considered the main abilities which one must have to successfully function as a leader in these fields. These abilities were finally summed up in three main precepts: ability to do things skillfully, ability to cope with people, and ability to do research or to contribute to the search for truth. The first is interpreted from the Greek word "TEKNIKH", the second from "FRAGMATEIA", and the third from "EXETASIS". These represent the philosophy of EPSILON PI TAU.

The ideals of the new Greek letter society were to recognize the place of "skill in Industrial Arts and Vocational Education;" to promote "social efficiency"; and to
foster, counsel, reward, publish, and circulate the results of "research" effort in the fields of its interest.

TEKNIKH has been explained and lauded by several of the early members of EPSILON PI TAU, but it remained for an honorary member, John Woodman Higgins (149, p. 6), former President of the Worcester Pressed Steel Corporation of Worcester, Massachusetts, and founder of the Museum of Steel in Worcester, to state its case. Speaking of "skill," he said:

If a laborer works solely with his muscles like a horse, he delivers horsepower. The market value of horsepower is one cent per horsepower-hour. Much as we require and admire well developed muscles, physical achievement entails coordination of other faculties.

The foregoing information shows very well that the purposes of the founders of EPSILON PI TAU were clear and timely. In the period 1929-1958 EPSILON PI TAU has become an international fraternity with 65 chapters and 10,000 members. The international chapters are in Thailand, Puerto Rico, and Canada.

Appraisal of the effect of EPSILON PI TAU would not be complete without taking into account the influence of its dinner meetings which were always formal prior to World War II. Much could be written of their dignity, beauty, and inspirational qualities. To provide the reader with some indication of the program of EPSILON PI TAU since its inception, the following list as reported
initially by Warner at a meeting of the Iowa Industrial Arts Association held at Des Moines, in 1956, follows:

THE PROFESSIONAL RECORD OF EPSILON PI TAU

1. PROJECTS, STAFF STUDIES, PRIZE ESSAYS, SYMPOSIUMS

American Industrial Arts Association. 1939
Baccalaureate. 1939
Biography: Bonser, Woodward, ....
Canada. Buffalo AVA Convention, August 12, 1958
Curriculum to Reflect Technology. 1947, 1956, 1958

Electricity (2). Deck, 1950, 1955
Elementary Programs. 1938
Graduate Work. Under Constant Study
Graphic Technology McElheny, ....
Impact of Technology. 1957

Interpretation Bulletin, U.S. Office of Education. 1937
Overseas Projects (12). Philadelphia AVA
Convention, August 6, 1957
Prospectus, Ohio. 1934
Public Relations. 1934
Standardization. 1933

Supervision. 1933
Teacher Education. Under Constant Study
"Testing" vs Evaluation. 1931, ....
Three Degrees. 1957
Vestibule Laboratory of Technology. 1947, 1957

2. THE EPSILON PI TAU BROCHURE SERIES. Currently in Editions of 15,000

American Tradition. Bode, 1942
Design of Programs. Jackson, 1950
Economic View. Clark, 1947
Graphic Arts Research. Winkler, 1952

Historic View. Good, 1943
Industrial Museums. Higgins, 1938
Modern Programs. Johnson, 1940
2. **Iota Lambda Sigma.** The professional education fraternity of Iota Lambda Sigma was founded at The Pennsylvania State College in 1927 by Dr. F. Theodore Struck.

The purpose of the fraternity was to promote the causes of industrial education through three major objectives; the recognition of professional training in this special field, the special recognition of higher scholarship in this field, and the creation and maintaining of a closer fraternal bond between the actual and prospective teachers, supervisors and directors who are taking professional work in any authorized college or teacher training agency.

Chapters may be organized in any college, university, or agency in the Western Hemisphere that maintains a department, school, or college of industrial education which has been designated in the state plan for vocational education as the institution for conducting teacher training in the trades and industries; or in any college or university that can show to the satisfaction of the Grand Chapter that it provides facilities equal to such designated institution.
The first national organizational meeting was held in Milwaukee, Wisconsin in 1930. At this meeting the following officers were elected:

President - F. Theodore Struck
Vice President - Clyde H. Wilson
Secretary - George Resides

It was voted to hold the annual meeting of the fraternity in the same city and at the same time as that of the American Vocational Association since the two organizations were so closely associated. Consequently these meetings have been held jointly since 1930.

The national meetings of the fraternity have been attended by approximately 100 persons annually and are dominated chiefly by officials of collegiate and vocational associations with very little student participation. At the local level students tend to operate the fraternity to a greater extent. The national meetings have had the following speakers, among others, which is indicative of their vocational leanings:

J. C. Wright
Walter L. Loomis
Charles A. Prosser
Thomas H. Quigley
L. H. Dennis
Frank M. Leavitt
William Penn Loomis
Presently there are 22 chapters with approximately 4,500 members.

Collegiate General Education Programs. Colleges are striving to find new ways in which to make general education more meaningful. They wish to present the students with the opportunity to obtain a broader understanding of their surroundings. Different colleges have different concepts concerning how this learning should take place. The events of today indicate a need for further understanding of fundamental principles. One of these concepts to broaden understanding is the industrial arts general education program or the student workshop idea. Warner was the first to note the development of this idea, an idea which is a means whereby the students of colleges may gain experiences in all types of practical arts activity. Interests may be pursued into the realm of physical execution. It is a service to the total school program and makes contributions wherever possible.
Warner became so interested in this phase of industrial arts that he arranged for Dr. Kenneth Phillips, later Head of the Industrial Arts Department, San Diego State College, San Diego, California to perform a national survey for the American Industrial Arts Association. Phillips investigated the extent of student workshops in 406 liberal arts colleges in the United States. He found that of these 406 colleges, 213, or 52 per cent, indicated some form of student shopwork program.

Phillips (112, p. 73) stated the objectives in the following manner:

The student workshop idea is to be organized; (1) to support the other agencies of the college in accomplishing their objectives, (2) to develop appreciation for fine cultural applications and expressions, (3) to help the individual gain experience in solving personal and social problems, (4) to provide an opportunity, in an informal situation, for the student to gain insight into his abilities and evaluate them, (5) to stimulate students to express themselves creatively in a variety of mediums, (6) to demonstrate good workhabits and the satisfactory experiences which are inherent in their use, (7) to engender an attitude of safety consciousness, and (8) to provide the college with a natural means whereby the student may be judged and evaluated.

Phillips (112, p. 6) formulated the following functions to enable the workshop to obtain its objectives:

The functions of the student workshop should be: (1) recreation, to foster hobbies and handicrafts, (2) creative expression, such as work in clay, stone, wood, glass, metal, plastics, graphic arts, photography, textiles, and the like, (3) research and developmental facilities for working out practical applications of professional or
scientific ideas, (4) extra-curricular, such as stage settings, home coming floats, intra-mural equipment, and so on, (5) construction service, where home furnishings and similar items can be built, repaired or refinished, (6) student labor, where manufacturing programs are in process to help students earn their way through school, (7) social service, such as in the making of Christmas toys, or other gifts or services to those in need, and (8) extension of classroom instruction, such as the making of models of a Shakespearian setting, a Grecian column, or a diorama.

Phillips noted, however, that 120 schools, 56 per cent of those reporting programs, fulfilled not more than one of the functions as developed above. He also reported that women's colleges provided a greater proportion of student workshops than other types of institutions.

Among the schools Phillips (112, p. 139) found most progressive in establishment of student workshops were: The University of New Hampshire, Durham, New Hampshire, and Dartmouth College, Hanover, New Hampshire. A brief resume of these programs is presented.

1. The University of New Hampshire. This institution has a student body of 2500 men and 930 women, and a faculty of 260. The workshop was built in 1942 more or less by students and faculty, to provide the students and faculty with a place to work on wood, optics, graphic arts, ceramics, plastics, leather, and light metals. There has never been any promotional efforts to raise student attendance which has remained at approximately 65 per cent for some time.
Professor Wesley F. Brett (112, p. 154), Director of The Workshop Program, made this statement in an unpublished report to the school.

I do feel that there is a future of service to certain individuals, of service to the state that can be performed in no other way. There is an implication of a way of life that education must grasp and of which it must be a part to be an effective instrument in the future. There are glimpses of opportunities in exploration for the novice, of vertical research for the skilled, of gradual awakening among students to the challenge of better things, of encouragement to creative imagination for the modern craftsman. To challenge the young American to further his heritage of ingenuity tempered with humanity. . . .

The overall picture at this institution is one of a successful program which will continue to grow.

2. Dartmouth College. This institution has a student body of 2,400 men and faculty of 265. The workshop was built in 1940 under a grant from the college. Like other workshops there is no college credit given for work there and the students and faculty come and go in their free time. The workshop was developed to provide students and faculty with the opportunity to express themselves in wood, metal, graphic arts, and plastics. Ceramics and painting are avoided because of a fire hazard. The work has been promoted to some extent in national magazines and newspapers. The attendance has increased yearly and now stands at 75 per cent (1956) of the student and faculty body. The work is under the direction of Virgil
Poling, who holds the rank of full professor. Poling (112, p. iii) emphasized the need for such a workshop in the foreword of Phillip's survey:

A hundred years ago or more the boy who went to college was fairly well equipped with the skills we associate with the Practical Arts. His daily living required the use of some tools and the solution of mechanical problems. He was acquainted with the simple industrial methods in practice at that time. When he went to college he studied books—Latin, Greek, Mathematics, etc. Now, his daily living is far removed from anything mechanical. Problems and procedures of industry have become more complicated as he has had less opportunity to be acquainted with them yet he still goes to college to study books. Has anything in our education program taken the place of the common practical experiences of a century ago?

It seems to me that the Practical Arts have a more important mission than ever before in the education program of today, but it is important that we study our problems, and find the niche where the Practical Arts can contribute most to the education program.

As this report is written Dartmouth is constructing a Creative Arts Center including not only woodworking but painting, sculpturing, ceramics, graphic arts, scenic design, and the theater. This trend can be found also at Harvard College, and at Wellesley College. Harvard has already raised the money for a new design center. The emphasis in the design center will be more in the direction of materials and learning how to use them and less in the direction of fashioning utilitarian objects such as furniture.
Apparently a great educational service can be made by the student workshop idea, as colleges utilize its functions to help students apply themselves on a practical level. This can be done in an educational setting where help and guidance is available.

After a lengthy period of development, industrial arts has finally established itself in the regular pattern of American Education, especially in the secondary schools. This transition has been the presentation of Chapter II. Chapter III will outline the nature of industrial arts education based upon its doctrine, missions, and curriculum.
Part II
INVESTIGATIONS AND FINDINGS

Chapter III

NATURE OF INDUSTRIAL ARTS TEACHER EDUCATION

The change in the United States from an agrarian culture to one of industry has occurred during relatively few years, due primarily to developments in the fields of science and technology. Economic changes have produced a materialistic culture to replace the idealistic one of earlier years and industrial arts attempts interpret these changes by providing the means for their study.

**Doctrine.** The premise of industrial arts, according to state, federal, and national leaders (146), is based upon: (1) the individual, (2) his economy, (3), his social pattern, (4) his resulting material culture, and (5) the precedent of historic example. It may be said that this composite is made up of four postulates: (1) the HUMAN postulate, to stimulate growth, (2) the ECONOMIC postulate, to reflect technology, (3) the CULTURAL postulate, to depict social, material, and political implications, and (4) the PROFESSIONAL postulate, to reflect morale, leadership, and progress.
In this chapter each postulate will be examined to derive the industrial arts doctrine.

1. The HUMAN Postulate. This postulate is composed of numerous subdivisions which warrant discussion.

   a. Native impulses such as man's need for experimentation, manipulation, creation and art, and group participation are ever present. Bonser wrote (22, p. 34) as follows concerning some of these impulses:

   Man is by nature curious, exploratory, investigative. He finds joy in the expression of these impulses. Most of them may be exercised and satisfied through successful expression in connection with his work as well as his play .... The school life of children should afford the most ideal condition for the growth and refinement of creative impulses.

   Man is a curious creature which fact leads him to glory in fields of peaceful science and often to disaster in militant science. Man has an inherent need to touch, handle, and apply various materials, and processes found in everyday life, thus creating useful and artistic products. Man is naturally gregarious and desires to work and enjoy recreational opportunities with others. These needs are pointed out by Bonser (21, p. 12) in Industrial Arts for Public School Administrators:

   The Manipulative Impulse - a tendency to find much satisfaction in handling materials, and tools that are used to modify the form of materials. This impulse gradually grows, if exercised, into the impulse to construct, and it is the natural drive to all forms of industrial production. Its
particular form of expression is determined largely by the stimulation and conditions of the environment. The school can make a part of this environment whatever it will.

The Investigative Impulse - a tendency to be curious, to desire to know how, why, what for, and all about the operation of whatever the environment affords. Exercised and directed so that satisfaction results, the casual inquiries of the child develop into experiments to try things out. Upon the development of this ability rests the growth of scientific inquiry. Industrial processes are largely matters of applied science, and the use of the investigative impulses of children is one of the most potent means toward their growth in interest and understanding of that which is most valuable for the selection and use of industrial supplies and for the intellectual appreciation of the modern industrial world. Upon development of this ability depend one's health and economy and efficiency with which one lives. It is one most important form of ability which "manual training" and "handwork" have ignored and neglected. It is the chief basis for thinking and all other intellectual growth.

The Art Impulse - a tendency to find satisfaction in form and color, expressing an active phase in combination with the manipulative impulse - a desire to express ideas in drawing, painting, and modeling, and in designing, constructing, and decorating objects. Upon the exercise and satisfaction of this impulse depends growth in both knowledge and appreciation of beauty in the products of industry.

The Social Impulse - a tendency to find satisfaction in sharing the interests and activities of others; and to have others share one's own activities. The development of this impulse affords the basis for cultivating cooperative activities, teamwork, sympathetic understanding of others, and the means of group participation which is essential in democratic citizenship.

b. The nature and development of desirable traits such as skills, attitudes, interests, and
appreciations are important elements of the HUMAN POSTULATE. Industrial arts is an ideal medium to provide direction for the development of these traits. The technological laboratory or general shop offers unlimited possibilities for implementation because of its diversified nature. Silvius (131, p. 31) wrote regarding the general shop:

In many of today's general industrial arts programs, which are carried on in a general shop, one would not always find students in designated areas for specific kinds of work such as woodworking, electrical work, and metal-working. Instead, each student is assigned a work station where he remains while he develops and builds a project. When examining what is done at these work stations, it is found that the projects cut across several conventional shop activities. For example, a boy may be building a small electrical motor which has wood, metal, and plastic parts, and provides experiences in wood, metal, and applications in electricity. The only time that it is necessary for him to leave the work station after the project has been planned is when he uses some of the service equipment such as a jig saw or buffer.

This approach is sound since it provides the opportunity for individuals to progress at their own rate while they design and develop projects, and carry on work under conditions similar to those found in a life situation.

The general shop is not a course of study . . . . The general shop is a room that has been equipped and organized so students may participate in various activities and have experiences with a variety of tools, equipment, and materials.

Some educators (150) advocate this type of general shop in which the activities focus upon mechanization and technology with major areas of personnel management, power, transportation, communications, construction, and manufacturing.
c. Therapy of Performance. Unfortunately the industrial arts program has been utilized very often by administrators and others as a dumping ground for those students termed sub-normal or problems in discipline. This is contrary to the mission of industrial arts as it should serve as a medium for stimulating mental activity. The program offers exploratory experiences in almost all phases of living in a technological society and the student is encouraged in self-expression through this experimentation, thus providing himself with tangible results for his efforts. Herbert Carol (32, p. 9), noted author on psychology, in *Mental Hygiene*, explains this phenomenon as the need for recognition. The famous Hawthorne Studies as reported by George Homans (70) in *The Human Group* are excellent examples of this particular need. These studies performed at the Western Electric Company laboratories in Chicago, Illinois, established that recognition of the worker as a fellow human by management, did more to increase production than any other factor. Almost every activity in the industrial arts shop carries with it some sense of accomplishment when properly executed.

2. The ECONOMTC Postulate. A discussion of this postulate would be incomplete without a presentation of the rise of technology in the United States. Frederick
Dewhurst (47), noted industrial economist, reported in his book *America's Needs and Resources*, that as late as 1865 all but ten per cent of the power consumed in the United States was produced by humans and animals. Dewhurst went on to state that in 1955 ninety-five per cent of the nation's consumed power was produced by machines. This information is seen more clearly in the accompanying chart. Consequently one is able to visualize the vast change in economic potential of the people as the United States shifted from an economy which was almost wholly agrarian to one which was almost wholly urban.

In the United States industry had its origin in the home, and the citizens were able to witness the components of the economy without the barriers which confront them today. Gordon O. Wilber (156, p. 36), former Head, Industrial Arts Department, Teachers College at Oswego, New York, in his book *Industrial Arts in General Education* pointed out those barriers by saying: "The complexity has led directly to a centralization of industry that has removed it from the every-day experience of the average boy and girl."

In former years almost every family manufactured its entire wardrobe, house, cooking utensils, transportation vehicles, and other necessities. Those items which were not "home made" were usually manufactured
locally without restriction to observation of the process. Often if one family was especially adept at producing a special item such as shoes, that family made more shoes than it needed and traded them for other necessities. The "craftsmanship" involved in this manufacture was passed from father to son and is, in some instances, still in existence as in the stained glass industry.

As the nation progressed, complex machines took the place of the home and community craft shop, until many industries such as the automotive engine enterprises, have become almost completely automated. Wilber (156, p. 37) said:

Growing also from the increasing complexity of industry is a tendency toward division of labor. Within any large industry the number of different operations may run into the thousands. Rarely does any one person perform all the operations which go in completing a finished article. Very likely he performs only one small operation and repeats it over and over again.

If the youth are unable to observe first-hand the technological changes taking place in the world, then the responsibility rests upon the schools to provide a means for such observation. Warner (107, p. 29) said:

The public school must provide the opportunity for young and old not only to become acquainted with changing industrial processes and the social-economic problems resulting, but to include a wide range of experiences particularly in the material changes which have and do occur. This is so evident if people are to participate intelligently in programs dealing with the social control of the industrial structure. The individual pupil needs to have
actual contact with a wide range of industry. This will come not only through the performance provided him in a school's LABORATORY OF INDUSTRIES, but through planned visits and investigations to motivate further study in Industrial Arts and its related subjects of the problems involving capital and labor, conditions of employment and unemployment, transportation, advertising, salesmanship, and quality and use of materials and products, all in addition to many other related problems.

**Consumer literacy** is another major problem facing the average person in this age of the "no down payment." As early as 1933 the President's Research Committee (113, p. 858) reported in *Recent Social Changes in the United States*:

> With all the much discussed pressure for standardization there is probably a greater variation from house to house in the actual inventory list of family possessions and of activities by family members than in any previous era in man's history. The consumer's problem is one of selection to a degree never known before.

The identical situation exists today but in a more advanced state. The buyer has a very poor vantage point when attempting to buy. Salesmanship is extremely high-pressure; it is almost impossible or at least extremely difficult to watch most of the purchaseable items manufactured. Down-payments on large items are often so low and depreciation so high, that an item will be worth on the open market immediately after purchase, less than the amount owed. All is not black however for the buyer due to such outstanding organizations as the Better Business Bureau, the United States Department of Agriculture,
Public Health Service, Federal Trade Commission, and several others. All of these organizations together are unable to protect the unwary completely and it is the buyer's responsibility to do a minimum of market research before purchasing. The selection of an item in preference to another is a result in most cases, of shrewd advertising. Stuart Chase (35, p. 1), noted author of works on national economy, in Your Money's Worth remarked:

Why do you buy one make of automobile rather than another? - Why do you buy the tooth paste you are using -- what do you know about its relative merit compared with other tooth pastes -- do you know if it has, beyond a pleasant taste, any merit at all? - Is this cake of soap really going to give you a school girl complexion? - Do you know what kind of paint or varnish you ought to have for the floors, the studio walls, the picket fence, the kitchen shelves? How many washings will those shirts survive; how many ball games those stockings for junior; how many shaves that safety razor blade? What does "solid mahogany" mean to you, and what does it mean to the furniture trade? What do you know about the ultimate effect on your own cells and tissues of that fat reducer?

Warner (107, p. 31) answered Chase's questions by saying:

"The only way for the people as a whole to become intelligent and discerning buyers is through participation in such problems under the direction of educational agencies of which the schools are only a unit."

Naturally it is important to know what to expect in way of service from the item once it is purchased, as well as the ease of servicing and the expected cost thereof.
All of the above mentioned facts are related to the practical arts field, of which industrial arts is a part.

3. The CULTURAL Postulate. Education, although simple in scope, preceded the arrival of civilization and consisted primarily of teaching the young how to hunt and fish; how to prepare food, clothing, and shelter; and to appease the surrounding spirits upon whose likes and dislikes the family's existence depended. As civilization developed, human activities became more complex; industries became more and more specialized; and to keep pace, education became more complex and specialized. This action or interaction of natural events has contributed to the American way of life which is based upon technology and democratic action. These bases are pointed out very clearly by Wilber (156) in Industrial Arts in General Education, the theme of which shows that industrial arts is endeavoring to promote the means for the citizens of this nation to have experiences in the changing technology under democratic leadership in the schools.

The understanding of values which a society establishes for an item is extremely difficult. The United States has swung from an idealistic culture to one materialistic in nature, all within the past 15 or so years. It is impossible to determine specifically why
this has happened, but it may be assumed that the schools have contributed to the change. Industrial arts can assist those who desire an understanding of their heritage and the changes in technology by providing places and methods for their study.

4. The PROFESSIONAL Postulate. Charles Bennett (17, p. 11) in his History of Manual and Industrial Education Up to 1870 reported that working with one's hands was a religious obligation as far back as it is possible to trace the activities of civilized man. Churchmen were considered to be the first scholars of language and literature, gaining such information so that they might teach their followers about life after death. The church is no longer considered the leader in fields of education and consequently is not resolving the issues inherent thereof. Leadership in educational matters has been a major problem for some time as it is difficult to obtain men with vision to work for the good of their fellow men, for remuneration inconsistent with their preparation. As mentioned previously, recognition is a powerful motivating influence for most men and not relegated to students alone. Public criticism of education, coupled with low pay has done much to eliminate potential and active leaders from the field. The professional leader has lost prestige, especially at the doctoral level, witness the current
salary situation in most high schools which often offer a
greater salary than colleges for the same preparation or
less. This situation is especially true in California,
one of the highest paying states in the United States.
The beginning salary for a high school teacher with the
masters degree plus 30 additional semester credit hours
of upper division work is $5,600 for ten months, while
the same teacher must have the doctorate and is offered
only $4,300 (1956) to teach in the state of New York in
its university system.

Another responsibility unique to the educational
leaders of today is that of recognizing and exposing
those persons who would destroy the American educational
system by means of overthrowing the government. The
master problem is that of recognition as most Americans
are loyal but unschooled in subversion. It is unlikely
that a man dedicated to one plan of world domination is
capable of presenting clearly the many facets of democratic
education without allowing personal opinions to color the
presentation.

Buell Gallagher (58, p. 7), former President of
the City College of New York, specified disqualifying
attitudes in The Meaning and Mission of Higher Education:

Educators in providing opportunities for
freedom are under moral obligation to disqualify
those who would use liberty to destroy freedom.
The man whose mind is closed has no place in free
inquiry. The man who has surrendered his judgment to a party or a prejudice has no rightful place in the fellowship of free learning. He lacks the integrity by which moral choice is guided. In short, just as I would not hire a Communist to teach communism, but would insist that men of integrity must teach about communism and that it must be studied freely.

Gallagher's statement is not too unlike that made by Milton (98) in Areopagitica who said:

How can a man teach with authority, which is the life of teaching, how can he be a Doctor in his book as he ought to be, or else had better be silent, whenas all he teaches, all he delivers, is but under the tuition, under the correction of his patriarchal licenser to blot or alter what precisely accords not with the hidebound humor which he calls his judgement.

Missions. The missions of industrial arts are centered in the normal, atypical, professional, service, and recreational types. An industrial arts program which satisfies the needs of these groups is mandatory.

1. Normal Groups. The levels of the normal group are elementary, secondary, collegiate, and adult. At the elementary level which is considered to be from kindergarten through the sixth grade in this report, industrial arts must provide a minimum opportunity for children to work with materials which are common to their environment. Unfortunately there is a trend away from industrial arts at the elementary level and it is the duty of the leaders to re-establish this important area of study. The program at this level is focused upon the home and school as
children of elementary school age need experiences which
aid them with their daily adjustment to their environment.
It has been found that children between five and eleven
years of age learn about technology best by participating
in related activity. This fact is presented by Bonser
(21, p. 12) in his *Industrial Arts for Public School
Administators*:

> So, also, we find, in normal children, that
if we provide the proper purposes and activities,
the organic development of abilities takes care
of itself. We regard the native impulses to
expression in the industrial arts as means which,
when exercised and directed by desired forms of
behavior or activity, develop normally and ef­
ciently.

It is important to avoid the development of any
vocational skills in the children while they are immature
and unable to choose prospective vocations with the
necessary insight. Bonser (21, p. 15) said: "Children
under 13 years of age have not reached the period of
wisdom and maturity for making wise, specific vocational
choices."

From the kindergarten through the sixth grade,
the main emphasis in industrial arts will probably be in
making those items and performing those processes which
do most to help children to acquire important meanings
and understandings necessary to comprehend the rapidly
changing world in which they live.
In the seventh and eighth grades, particularly where the school provides shop facilities, the main emphasis in industrial arts may be that of a separate subject area although there will still be opportunity to relate industrial arts to integrative curriculum units.

Industrial arts is recognized by most educators for its unique contribution to the educational program of the public schools. The importance of man's ingenuity to the development of our present civilization is an understanding children should acquire.

Ordinarily the seventh and eighth grades are thought of as junior high school. These are the exploratory years. As Dr. David Snedden (133, p. 15), late Professor at Columbia University, said in Reconstruction of I. A. Courses: "Here it is alleged, the typical boy wants to be treated like a man while still being permitted to behave like a kid."

Implementation of industrial arts at the elementary level appears to be rather well established; however, the same is not true at the secondary level. While the doctrine is well accepted, implementation is very disorganized, ranging from "trade-type" unit shops, to the finest examples of laboratories of technology. In the secondary school the industrial arts program is often the dumping ground for slow learners, disciplinary problems, and many other types of students with whom the academic teachers
are unable to cope. Industrial arts often aids these so-called "misfits" immeasurably although these represent only a few of those benefiting under the direct mission of general education for all students. That industrial arts is a part of general education for all people is clearly illustrated in the Report of the Harvard Committee (64, p. 160) of 1947 entitled General Education in a Free Society:

In the final section of this chapter we shall say something about the importance of shop training in general education. For those who intend to go into scientific or technological work, it has special relevance. The manipulation of objects, the construction of simple apparatus all are required for entry into the world of experimentation. Even the pure mathematician is greatly aided by shop experience: the forms, contours, and interrelations of three-dimensional objects provide a stimulus and satisfaction not to be achieved altogether within the limits of plane diagrams. The lack of shop training is at present a most serious deterrent to entry into all types of technological work and to college and post-graduate training in science, medicine, and engineering. What students should learn in secondary school specifically is the use of simple hand tools and the execution of simple basic operations such as soldering and elementary glass blowing and joining. If the student can be taught to operate a drill press, a wood lathe and a machine lathe, so much the better.

At the collegiate level, industrial arts functions or should function as a part of general education; however, this is probably the most neglected of all the groups. It offers unlimited possibilities for academic and social activities such as cooperative shop work, acquaintance-ship with consumer products, and the like. It is hoped
that the administrators of this level will become more aware of the unlimited general education value in industrial arts and put it to use. The present use of industrial arts at the collegiate level is almost totally teacher education.

At the adult level the industrial arts program is ordinarily offered on an informal basis, providing for the need to create. Many adults, especially in such western states as Arizona and California are enrolling in industrial arts classes to gain "do-it-yourself" information as well as hobby or recreational facts.

2. Atypical Groups. The atypical programs include those especially adapted for the blind, deaf, crippled, and other exceptional groups including the gifted. The value of creative activity for the impaired groups has no bounds. Various work techniques for the different groups have been developed, enabling many graduates of the various programs to gain employment. The rise of occupational therapy since World War II has increased the scope of the industrial arts program since many occupational therapy classes are taught as a service to that program by the industrial arts departments. In general, the occupational therapy classes resemble those of the general shop.
3. **Service Groups.** It would be almost impossible to calculate the number of industrial arts service courses offered to the various divisions of most universities and colleges. For example The Ohio State University industrial arts program provides for the education of occupational therapists as mentioned in the section under atypical groups and provides instruction in crafts, machine and handwoodworking, and metal work. This type of service program is typical throughout the United States. Industrial Arts is proud to offer these courses and would like to extend them to all students. There are a few students each year at the collegiate level who choose some industrial arts courses as electives, but this action is rare. (See Chapter II, Collegiate General Education Programs.)

4. **Professional Groups.** The professional level embraces three groups: baccalaureate, masters, and the doctorate.

At the baccalaureate level the orientation of the entire teacher education profession is presented along with an understanding of American industry and the development of broad skills in many areas. Unfortunately, the method and manner of student selection at this level has been neglected, thus creating a problem within the profession.
At the master's degree level the emphasis is on teaching skill not on technical skill in order to produce a master teacher. There is some difference of opinion concerning this point of view as evidenced by graduate school bulletins. Leadership training and research competency should be extended during this period of education.

At the doctorate level the mission of industrial arts reaches its highest attainment. This level must be retained for the leadership group who will determine the final success or failure of the industrial arts program in American education. Ineffective research studies must not be approved for this level and a successful program should have a national leader and master teacher at its head.

At present professional programs seem to be lacking in certain respects. Joseph Justman (77, p. 52), Professor of Education at Brooklyn College, wrote the following in College Teaching: Its Practice and Its Potential:

There is general agreement that the typical graduate program pursued by prospective teachers fall short of the mark: commendable as a means of training in specialized scholarship and contributing also toward broader discipline, it does not offer direct preparation for the fundamental professional responsibility - teaching. More serious than the omission of training in the technical aspects of instruction is a failure to impart broader concepts of education, human development, the learning process, and the teacher's mission.
Curriculum. Since industrial arts is a reasonably new field which has undergone many curricular and name changes, it is difficult for many to visualize its place in the curriculum. However, when one realizes what an important role industry plays in everyday life, it is much easier to visualize the importance of industrial arts. Bonser (21, p. 5) was one of the first to recognize the importance of the program.

When we realize the extent to which we use material commodities in daily life, and the extent to which the world's work consists of making and distributing of such commodities, we can appreciate the importance of that study of the materials and products of industry which will make us intelligent and efficient relative to their use and their production. The value of this work also in providing a natural approach to and a motive for the materials of geography, arithmetic, history, and fine arts entitles it to a place of much significance in the curriculum. In schools, the industrial arts should have a place commensurate with their importance outside of school. Their study not only relates to the meeting of practical needs and problems of the consumer and citizen in daily life, and to an understanding and appreciation of the economic and social problems of the world of today, but it also furnishes a basis for much that we think of as more highly cultural or liberalizing. It helps greatly in understanding and appreciating many allusions in literature, music, art, and the folk games and plays of both our own time and the past.

Another consideration which entitles the work to a large place in the curriculum is the fact that industrial arts affords opportunities for educational growth adapted to the nature and abilities of that more than half of our school population who think more readily in terms of concrete experiences than in verbal or abstract terms.
The scope of the industrial arts curriculum is so vast that it is impossible to include the whole in a single discussion. Consequently, a separate presentation is necessary for the elementary, junior-high, senior-high, collegiate, and adult programs.

In the early or elementary years, the total purpose is to assist the teacher in clarifying concepts concerning the home, school, and community. At the junior-high level the purpose is dominantly general education but is combined with basic technological orientation, that is the junior-high school industrial arts program according to Warner (143, p. 41):

"...provides a period of exploration and guidance preliminary to choice of career or vocation training." At the senior-high school level it is the consensus that shopwork should include opportunities for realizing industrial values. This thought was emphasized further by Warner and others (143, p. 61):

Senior-high schools and vocational schools provide a period of advancement toward a chosen goal. Industrial arts as a part of general education contributes to this end by: (a) developing an appreciation of design and quality in manufactured products; (b) providing practice in the use of materials and tools for recreation and home utilization; (c) sampling a variety of industries, through advance school courses, in preparation for entrance as a beginner into the skilled trades or into college courses in engineering and architecture. Industrial or trade education as specific training prepares for entrance into the skilled trades with
advance apprentice standing, and provides, with other subjects of the curriculum, a background for later promotion to minor executive positions in industry.

The collegiate level industrial arts program is focused upon teacher education primarily but more and more colleges are offering courses in this phase of general education to strengthen earlier concepts of industry. (See Chapter XI, Collegiate General Education Programs.)

The public schools are taking more and more interest and participation in the education of adults as evidenced by the increasing enrollments in late-afternoon, evening, and Saturday classes. Industrial arts at the adult level attempts to satisfy the recreational need of the populace. The 1956 addition of the Encyclopedia Britannica (53, p. 186) stated that approximately 100,000 men and women are enrolled in public school adult classes.

1. Elementary Curriculum. The child of today has few opportunities for gaining first-hand knowledge of industry. Almost everything he touches is a finished product which he accepts for use with little or no thought concerning from where it came. This concept was emphasized by Warner and others (143, p. 17):

The child's experience on the whole is with the finished products - stone already hewn, lumber that has been milled, steel girders assembled for building, clothing bought ready-made at the
store or from a mail-order house, foods put up in cans, cartons, or packages. The product is ready for use on demand. He does not realize the romance, the work, and struggle behind the scenes. He is unaware of the wonders of industrial achievement.

It is common to hear administrators and teachers speak of industrial arts as a program for boys. Nothing could be further from the proper exploitation of the program. Both sexes are consumers of industrial products and should benefit from the objectives of the industrial arts program. Each will have an idea of how things should be done and this interchange of ideas will enhance the interest of all in the problem at hand.

At the beginning it is important that activities should be simple although later, after basic skills are acquired, they may be more complex or at least reach the level of the more advanced pupils. Since the interest span of the elementary pupil is concerned with the home, school, and community the teacher should provide experiences which will make the pupils' daily existence more meaningful. This may be done by providing him with the opportunity to become acquainted with the raw materials used to manufacture those items most common to his daily existence such as paper, wood, cloth, and clay. At first the pupils will need considerable guidance in the use of tools and materials but as they progress a minimum of supervision will be needed. The teacher's most important
contribution will be to evaluate the worth of each activity toward the childrens' overall learning. An elementary activity program which has as its objective a handicraft or handwork program such as paper cutting, bead stringing, and so forth, is not oriented properly. The consensus is that the elementary program should be one of integration, preferably with the social studies. Bonser (21, p. 22) pointed this out:

As this brief summary of content suggests, industrial arts is a field of rich cultural content - not the mere manipulative work of the old "manual training." Through this thought and appreciative content, vital relationships to other subjects become clearly apparent.

2. Junior High Curriculum. It was mentioned previously that the junior high school program was focused upon basic orientation to industry and provided a period of exploration and guidance preliminary to choice of career or vocation. Warner and others (143, p. 41) expanded this concept:

Industrial arts as a part of general education in these years (a) provides information regarding industry and workers; (b) reveals employment opportunities in industry; (c) satisfies the boy's and girl's desire to create useful things; (d) develops hobby and handy-man interests and abilities; (e) contributes to the tastes and judgment of the prospective consumer; (f) develops interest and ability in home repair and maintenance; (g) affords practice in safety related to the school home and industry; (h) gives opportunity for cooperative effort in groups; and (i) illustrates and vitalizes the academic subjects.
Children between the ages of 12 and 15 years are naturally inclined to investigate and experiment. They like to do these things by means of constructive effort utilizing tools and materials common to the problem at hand. A skillful teacher, under ordinary operating conditions can add a degree of refinement to the childrens' attempts. This action must be taken without coercion if the resultant is to have meaning to the children. The average child at this level is not interested in skill as defined by adult standards. Many teachers stress hand-skill until little enjoyment is left in performance of the work, consequently children avoid industrial arts courses at a later date. It should not be forgotten that there is considerable mental skill involved in industrial arts work. Many times this phase of the program is minimized, reference, the old term "manual training."

An exploration of industrial materials and materiel by the junior high student would be impossible. However, a study of those materials and materiel most common should be included whenever possible. Those might include paper, wood, light metals, paint, and possible certain things common to the particular community. Tools should include those basic hand-tools plus the drill press, jointer, and circular saw, as well as portable hand-tools such as the electric hand drill and others.
Since the work in the junior high grades is of a nonspecialized nature, admittance to courses in this curriculum area should not be denied on the basis of sex. The past decade has proven that girls are not necessarily interested in only those mechanical aspects of life associated with the home. Warner and others (143, p. 49) summarized a method for attaining boy and girl participation in the junior high program:

Possible ways for providing industrial arts work to meet special needs of each sex and at the same time not deprive a pupil of one sex from what may seem desirable instruction for him (or her) in an activity that is usually characterized as special for the other sex include: (1) organization of some courses in parallel classes, on to include activities that in general accord with the interests of one sex, the other to include activities that in general accord with the interests of the other sex, than permit exchange of pupils, either as a class or as individuals, as the local situation may indicate as feasible and practicable; (2) organization of some courses in which there will be a sufficient number of pupil activities and projects to permit some selection in accordance with individual differences, including those characterized by sex.

The comprehensive shop lends itself to such a program.

Regardless of their future careers, students working together in school-shops, do so on common ground. They create material things of common interest utilizing their own imagination and interpretation of industrial methods. They can explore and experiment to obtain those results which give evidence of knowledge and skill.
3. **Senior High School.** Reference has been made that the senior high school industrial arts program is to some extent a continuation, on a more advanced level, of that work carried on in the junior high school. More often however, work more advanced than that possible in the junior high is offered due to the more mature interests and abilities of the senior high student. Warner and others (143, p. 61) stated:

Senior high schools and vocational schools provide a period of advancement toward a chosen goal. Industrial arts as a part of general education contributes to this end by: (a) developing an appreciation of design and quality in manufactured products; (b) providing practice in the use of materials and tools for recreation and home utilization; (c) sampling a variety of industries, through advanced school courses, in preparation for entrance as a beginner into the skilled trades or into college courses in engineering and architecture. Industrial or trade education as specific training prepares for entrance into the skilled trades with advanced apprentice standing and provides, with other subjects of the curriculum, a background for later promotion to minor executive positions in industry.

The secondary school program has come to accept industrial arts as a subject matter area the same as implied by the social studies. Formerly industrial arts was looked upon as a subject such as English or woodwork. Warner and others (143, p. 61) very early emphasized the need for this recognition:

Likewise, industrial arts has come to mean a broad program - the organization of economic, social, scientific, materialistic, and idealistic knowledge, as such is related to the lives of people in an industrial age. It is concerned with material
media - materials of instruction, tools, and processes - that are significant in the developing the values which industry contributes to life. Not until this large concept gained quite general acceptance did industrial arts make for itself a secure place in the American high-school family of accepted studies.

The academic standing of industrial arts in the secondary school has been affected by the practice of administrators of assigning the social misfits to the school shop. The industrial arts program is adapted to the needs of these youth. Nevertheless an over abundance of maladjusted students is not conducive to the attraction of serious and more intelligent students. Warner and others (143, p. 65) discussed the solution to this problem:

The real solution of this problem probably will not be found in a direct attack on any of these too common practices, but rather in a more careful study of potentialities of individuals as well as their interests, and in the selection of those experiences which will contribute most to the development of the possibilities in each individual. Some will profit most by academic experiences, others by the acquisition of tool skills, but the great majority will probably be served best by a generous sampling of all fields, a situation which demands a much greater integration of subject matter than we have had in the past.

Since the objectives of industrial arts are identical with the accepted objectives of any good high school program, a properly administered industrial arts program will contribute its full share to education. The chief objective of industrial arts should not be the saving of misfits; however, this outcome is too important and too
frequent to be omitted from the list of objectives of the senior high school.

Manual education or academic education is practical when it satisfies an individual's need. It would be incorrect to assume that work with tools and materials is always practical while the practicability of study through the media of books may not be measured or evaluated so easily. Unfortunately the concept held by many that industrial arts is a practical subject, infers that other subjects are not so practical. Industrial arts in order to be successful must be evaluated in accordance with its own contribution to education and not whether it is more practical than some other subject.

4. **Collegiate Industrial Arts.** Acknowledgement of industrial arts as an essential portion of general education precludes its inclusion in institutions of higher learning as well as in the elementary and secondary schools. Phillips (112, p. 1) wrote:

   The colleges desire to lead students to broader understanding of the "good life." Different concepts have developed as to the best way for this to be accomplished. This has taken place in a changing cultural pattern that is now predominantly technological. Dewhurst's *America's Needs and Resources*, indicates how great the advances have been during the past century, or since Abraham Lincoln. Events of everyday occurrence further indicate a need for new understandings. Liberal education can be a potent factor
in this situation. Students, especially, need a better basis than ever before, to face the realities involved.

It would seem to the layman that the collegiate general education program must be extensive since it appears to have a justified place in the college curriculum. However, this program at present is almost non-existent. (See Chapter II, Collegiate General Education Programs.) Present courses are focused primarily upon teacher education and since their composition is a matter of record they will not be discussed in this dissertation. The significant advance at the collegiate level should be in the area of general education. During the past 30 years or so a fundamental consistency of purpose has taken place in the elementary and secondary schools but has shown no evidence of existence at the collegiate level. Warner and others (143, p. 88) referred to this:

The fundamental principle of consistence in elementary and secondary education needs application at the higher levels. Colleges and universities, however, tend to incorporate departments, courses, and services which reflect varied institutional purposes. Through the leadership of field specialists and through the exchange of ideas among administrators and faculties, the work of the colleges becomes more uniform within functional groups. It is not anticipated that the curriculum and plans of all higher institutions will become ultimately identical. They may well be similar but only when the institutional types and purposes are similar. Each college must make its own decisions as to the departments to be embraced, the places to be assigned them in the organization, the courses to be offered, the entrance requirements and standards to be
maintained, the methods to be employed, and the relationships to be fostered.

A great many college students were denied the opportunity to study industrial arts during their elementary and secondary years. This denial was usually brought about by small enrollments and in many cases a curriculum restricted to college prerequisites. The needs of these students so described must be considered by college authorities. Warner and others (143, p. 89) made reference to these needs:

Orientation courses, of both classroom and laboratory type, would seem to be the first need. These broad offerings will provide initial contact and stimulation for many. They will discover the abilities as well as the needs of individual students. More important still, they will bring groups into view whose common deficiencies and desires will answer perplexing questions as to what services the college should extend.

It is impossible to describe specific areas of subject matter, methods, and the like to be used at the college level. It does seem clear, however, that one ideal phase of collegiate industrial arts can be successful in any institution's extra-class activities. Here service to the school, community, and students is accomplished.

5. Adult Industrial Arts Programs. The responsibility of the public school system to the adult learner is infinite. The justification for such responsibility
lies in the fact that public education is charged with the duty of producing an enlightened citizenry. Almost everyone can learn with proper motivation. Warner and others (143, p. 77) stated:

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 knowledge, appreciation, ability, or attitude, and hence in citizenship qualities, if he or she wills to do so. The school organization provides stimulus and facilities for personal and social growth. Public education admits no restriction, from the viewpoint of its citizenship objective, upon the range of educational service to the community, save only the limitations of the students in the capacity and the will to learn. The schools recognize however, the practical limitations which are inherent in the budget-making and taxation problems, but they find as their service increases in value to the community that school support is the more readily obtained.

It is true that the educational objectives of adults vary greatly. Industrial arts and its allied field, vocational education contribute to the goal of adult education. For many adults industrial arts objectives and those of vocational education tend to merge.

The contribution of industrial arts at this level lies in the areas of recreation and consumer literacy. Men and women of today have numerous hobbies in which they participate at the close of the regular work day. Many of these recreational pursuits were learned in extended day or night industrial arts courses. The
value of this work lies in the general development of the individual.

Another facet of adult industrial arts is consumer literacy. The ability to determine the worth of an article is becoming a cherished possession. Wilber (156, p. 50) listed the objectives of this phase of industrial arts:

**OBJECTIVE:** To increase consumer knowledges to a point where students can select, buy, use, and maintain the products of industry intelligently.

**EXPECTED BEHAVIOR CHANGES FROM STUDENTS:**

1. They will examine articles carefully and judge their value before buying.
2. They will look for constructional features in judging the worth of an article.
3. They will learn about materials and will apply their knowledge in making purchases.
4. They will become acquainted with trade names and will look for proven brands when buying.
5. They will maintain and use manufactured articles in such a way as to prolong their life and usefulness.
6. They will recognize quality and will buy accordingly.
7. They will buy on the basis of their needs, rather than entirely on the basis of price.

Dr. Frank Lorimer (90, p. 67) of Wellesley College, director of the famous Brooklyn Study of 1931 wrote:

In the field of private commercial relations there is need for scientific education in purchasing and consumption. At present there is very little
articulate popular demand for such education simply because its possibilities are not generally recognized. More than a billion dollars are spent annually in the United States in propaganda for particular products. Federal and state governments are spending considerable sums in educational programs for rural consumers. But as yet practically no attempt has been made to aid city dwellers in this important field of adult education except by a few independent organizations, notably Consumers' Research Incorporated. As more scientific and objective information is developed regarding the service values of goods, such "consumers' education" will become increasingly valuable.

Today, some 27 years later, public consumer education has not materialized to any extent. One or two important private research and testing organizations have arisen but in general public testing is carried on as before, in the areas of agriculture and home economics.

Instruction at the adult level is necessarily highly individualized. No two students seem to have the same preparation or motives for the course at hand. Often the instructor functions more as an adviser than a teacher. Each student seems to feel a specific need which he strives to fulfill in the shortest time.

Reference was made by Lorimer (90, p. 225) to the funding of adult education:

The distinction between juvenile and adult education, so far as the functions of the state are concerned, is artificial. It rests upon nothing but an unimaginative interpretation of a very recent tradition. If it is sound policy to spend public funds in the education of children, it is sound policy to spend such funds in the education of adults, provided the lines of proposed adult education are soundly conceived.
and prove effective in practice. Even the argument that the first responsibility of the state in education is for the young, when analyzed, proves empty.

The purpose of government is the good life of the citizens, and education is an essential instrument toward that end. But the development of the minds of individuals, the training of all as productive workers, and the cultivation of an appreciative grasp of the possibilities of human living is only in small part the function of the state. The more imaginative aspects of education must be developed in a variety of spontaneous social groups and institutions.

Sponsorship of adult education rightfully belongs to the public school system because of the responsibility which public education bears for recognition and support of adult education.

Chapter III has presented a derivation of the industrial arts doctrine postulated upon aspects of human development, both physical and mental. The changing culture and its inherent problems were discussed. Psychological pressures which originate from this changing culture and its inherent problems were discussed and illustrated. Finally it was illustrated how the different school levels participate in the facilitation of the doctrine. Chapter IV will present the derivation of superior administrative practices.
Chapter IV

DERIVATION OF SUPERIOR PRACTICES

This chapter records the attempt to derive a list of superior practices of administration, utilizing as a basis statements extracted from the literature of higher education.

A satisfactory set of standards for the administration of higher education has not been established, especially within the relatively new field of industrial arts. The literature reflects these facts. The literature within the field of higher education also reflects the desire to determine the nature of superior practices but little has been done to satisfy the desire. Dr. J. E. Kinder (81, p. 80) wrote in The Internal Administration of the Liberal Arts College:

The techniques of educational administration as applied to the public school system, have been subjected to thorough study and have been rather generally accepted by leading authorities. Little has been done toward formulating any such administrative functions in the field of higher education. Recently a more lively interest has been centered upon this phase of higher education. Educators have come to believe that the official acts of the administrator should be directed in a unified way to a single purpose. They should be consistent, logical, objective and free from fortuity. Each act or function should be performed in harmony with a philosophy of education which is built upon character, logic, careful observation, and calculated investigation.
The literature contains several reasonably complete lists of practices of educational organization and administration and the duties of leaders. A complete bibliography of the sources analyzed in this study appears in Part IV. These lists were analyzed first, followed by the other portions of the literature mentioned previously, for information from which were formulated the list of practices which composed the inquiry form. In the aggregate of this chapter the statements of practices considered to be superior within the organization and administration of industrial arts education and higher education are presented. They are presented singly in the order in which they appear in the inquiry form. Each practice is discussed and reference made to the more pertinent quotations from which it was derived.

Program Development. The office of the department head is the nerve center of the departmental system. Through this office must flow complete and accurate information concerning the many parts of the departmental program in operation; the degree of success or failure of each activity; problems encountered; new problems arising; solutions to old and new problems; and all other types of information necessary to the efficient administration of the departmental program. Consequently, it is obvious that effective programs must be designed around a
careful and accurate analysis of existing conditions and an objective appraisal of the facts.

1. The formulation of statements of departmental aims is a continuing process of revision to express changing social, economic, and technological conditions of society.

For many years it has been demanded that institutions of higher education meet the needs of society. The establishment of the land-grant colleges provided one answer to the social and economic needs of the time. The results produced by the introduction of new ideas, were achieved only because of the magnitude of the demand for such education. The establishment of the general-college concept such as that which comprises a portion of the University of Minnesota, is a result of the recognition of demand for that type of curriculum.

It is believed by some authors that the administration must work individually and cooperatively to meet the social and economic needs of the people within the administering institution's sphere of influence. Briefly the statement of departmental aims must express the needs of society. If the needs of society remained unchanged, the task of the institution would be reduced. However, the needs are almost always in a state of flux and their satisfaction requires the institution to review their aims continually. No set of fixed aims will suffice.
Dr. Robert L. Thompson (139, p. 117), late Chairman, Department of Vocational Education, New York University asked:

Are we so steeped in the practices and methodologies of late nineteenth century vintage that we fail to take cognizance of modern educational thought and mid-twentieth century industrial change and progress? Is there a need for all teachers and supervisors of industrial arts education to re-examine and re-evaluate their offerings, so that our program will "concern itself with the materials, processes, and products of manufacture, and with the contribution of those engaged in industry."

Warner (143, p. 88) expressed this statement in another manner:

All the needs of these various groups of young people are logical and deserving; all of their claims upon the time and assistance of higher institutions are natural and valid. Thus curriculums in the field of industrial arts at the college level should be devised in terms of group intentions and desires.

Dr. Henry Doerman (49, p. 96), in The Orientation of College Freshmen, and Professor Randolph Judd (101, p. 338), in the Quarterly of the North Central Association, expressed their belief that aims and objectives need constant study and revision.

The administrators must understand the social groups within their sphere of influence if the aims and objectives are to be adequate. It was expressed in the Bulletin of the American Association of Collegiate Registrars (2) as early as 1935 that educational philosophers have often named the fitting of the individual for participation in
life a major goal of education. The article (2, p. 250) stated if the goal was valid, the statements of aims, out of which the curriculum grows, must itself grow out of the needs and problems of contemporary life.

Dr. Floyd W. Reeves (119, p. 19) in The Liberal Arts College wrote: "The statement of aims must be set up in terms of institutional clientele, taking into account the social groups which the college attempts to serve."

The National Survey of the Education of Teachers (38, Vol. VI, p. 243) emphasized that the preparation of teachers should be determined by the demands which will be made upon them in various positions and not arbitrarily or upon traditionally set requirements.

Dr. Alvin I. Thomas (138, p. 131), Director of the Department of Industrial Education at Prairie View State College, Prairie View, Texas, formulated the principle that "the objectives of the college should lend themselves to continuous appraisal and reconstruction."

2. Statements of aims must be sufficiently explicit to provide a basis for curriculum construction and conversely to express the actual offerings of the department.

The curriculum of a department exists as a means to its aims and objectives, therefore, the demand that distinctness of these aims and objectives be made in explicit terms is a resultant of the recognition of this fact. It is reasonable to expect that any curriculum capable of being
directed should have definite aims and objectives which are compatible with those of the institution.

Survey commissions and other authorities often reach the conclusion that a satisfactory statement of aims and objectives must stress the relationship of the particular aims to the curriculum. Doerman (49, p. 45) wrote that the purposes of the school should "furnish the chart in the light of which all adequate solutions of curricular problems must be reached."

Reeves (119, p. 11) criticized several statements of departmental objectives when he wrote: "Often the statement of aims is not presented in sufficient detail to make them useful bases of curriculum construction."
The Baldwin-Wallace College Survey Commission (120, p. 13) registered similar criticisms.

Often the expressed aims and objectives of a department vary considerably from the current curriculum. Such a situation may prevent or at least impair, student's selection of a school. Either the aims and objectives should be written in a manner which conform to the existing curriculum or the curriculum should be altered immediately. Aims and objectives which have no degree of compliance are deceiving and in some cases may be actually harmful. Reeves reported that vocational curricula appeared in several colleges which he studied but no vocational objectives appeared in the college's statement of
aims. The lack of vocational objectives within the statement of aims would cause any catalog to be an invalid reference for the prospective student.

Thomas (138, p. 131) developed the following principle:

The objectives should be stated with sufficient succinctness that they give positive direction to policies, programs, staff, and students. The objectives should reflect an awareness of changing needs of individuals in a technological society.

3. The department head formulates and approves all educational policies to be presented to the college administration for confirmation.

In some institutions of higher education the administration considers that the departmental policies should be formulated by the department head. In many colleges and universities the departmental staff has no voice in formulating policies (4, p. 162). The department head exercises the powers delegated to him by the administration to present policies to the administration, to express his personal views of educational needs and opportunities as a statement of departmental purposes, or to so direct the departmental activities that they fulfill his desires, without the consultation of his staff. Hence, if the department head represents the instructors in these matters, that is, he makes decisions for the staff without its approval, this statement should be added to the list of practices: The department head should formulate and approve all policies for the educational work of the
department. Dr. Frederick Stowe (62, p. 16) former political writer for the Chicago Chronicle quoted several writers as declaring that the department head should formulate and approve all departmental policy.

If, finally, the department head and the department staff have equal powers in determining policies for presentation to the administration, then this statement should be added to the list: The department head and the department staff should formulate and each should approve, all educational policies to be presented to the administration. This latter statement is, of course, the true situation concerning educational policy determination in the majority of the departments in the United States. This cooperative type of policy formulation is supported by Dr. Earl W. Anderson (9), Chairman, Department of Education, The Ohio State University; Dr. Roald G. Campbell (30), Director, Midwestern Center for the Cooperative Study of Educational Administration, Chicago University; Dr. Robert M. Reese (117), Director, Trade and Industrial Education Services, The Ohio State University; Dr. Ernest O. Melby (96), former Dean of the School of Education, New York University; Professor John S. Diekhof (48), Hunter College; and others.

4. The department head is responsible for the initiation of programs looking toward the improved morale of the instructional staff.
The status of morale in the teaching profession is a topic of frequent discussion. Much of the comment is adverse and based upon opinion. What is "high" or "low" morale? In order to judge the morale of a profession it is necessary to establish criteria for evaluation which would possibly call for the comparison of morale within the teaching profession to that of similar professions. There is no fact which would give evidence that this has been established or even a comparison made in a scientific manner.

Numerous factors enter into the morale of a department. Disloyalty often stems from discontent which sometimes is based upon low salary, heavy teaching loads, a dictatorial administration, and other bases of a like nature. Melby (96, p. 113), wrote:

Whatever the facts are with regard to teacher morale, it seems clear that these have been produced by a wide variety of causes. Teacher morale is no doubt dependent in part on salary and working conditions, on the kind of school building and equipment, on community attitudes toward education, and certainly on the nature of supervisory and administrative structure and the character of its functioning. Educational administration cannot ignore any of these causes of low morale, even though it may not itself be directly responsible for the conditions which produce them. Since morale is an exceedingly important element in the vitality and success of any educational undertaking, administration must assume responsibility for doing everything it possibly can to see that teacher morale is at a high level.

Recognition must be given to the fact that a sound program of general education at both the elementary and
secondary school levels has real value as teacher preparation. The value arises in part because the individual engaged in teaching needs the general education for many phases of his daily activity. For example reading, writing, and arithmetic are fundamental necessities in all occupations. Furthermore, a sound general education is necessary as a foundation upon which a satisfactory teacher education program may be built.

Though present educational administration has great achievements to its credit, it has recently encountered serious difficulties and, in the process, has demonstrated its inadequacy when measured by the demands of mid-century free societies. "A crisis is mounting in education," according to Melby (96, p. 15). Our present system of administration cannot meet it. It has not sufficient dynamism to mobilize either the educational profession or the resources of the larger community.

Melby (96, p. 15) wrote:

For many, both within and without the profession, it is hard to sense the new challenge to education and educational administration. This is largely because we are the captives of past concepts and practices. Past education did not assume the responsibility of being, in truth, an instrumentality of social policy. Students were not graduated with the requisites to carry on an industrial arts program in certain employment areas.

When the department head is cognizant of these matters, and acts positively, he is functioning in a manner which will destroy those factors which seek to
destroy the department. Consequently it should be a prac-
tice of the department head to recognize morale factors
and act accordingly.

The following study is described to illustrate the
importance people place upon relatively insignificant prob-
lems. Sometime ago the Association of American Colleges
performed a questionnaire survey (81, p. 52) of internal
administration of colleges and universities within the
United States. It was found that many persons expected the
college president to take personal charge of such morale
factors as faculty housing, promotion of plans for faculty
insurance and retirement. Many also believed that the
president should promote and encourage faculty recrea-
tional and social life.

5. The use of reference materials for the
industrial arts department receives the same
consideration as tools.

Many look upon the library as a mere collection of
books, highly catalogued and equally well protected. In
reality this collection is an educational service or tool
for the personnel of the institution. The industrial arts
student studying physics requires special laboratory
equipment. He also requires a text. The former is gener-
ally thought of as a tool; the latter as a book. It is
suggested that both are tools requiring balanced consider-
ation. It is recognized that one tool is often more
necessary that another in a particular instance. However, each is indispensable within its own right.

One of the most important duties of instructors is in the area of research. This can mean either research for tomorrow's lesson or on a national level. It is the instructor's duty to be "up-to-date." Books at least in the field of education, become his tools. This concept is supported by Ralph Borden (8, p. 413) in the July 1957 issue of the American Library Association Bulletin.

In another article in the same publication responsibility for the selection of suitable books was placed upon both the instructor and the librarian. But the article (8, p. 70) continued, "as a master in his own field, the instructor should initiate recommendations for books and periodicals needed by himself and his students."

Warner and others (143, p. 91) wrote:

> Library materials of good account and varied types are needed to supplement or complement activities connected with shop and laboratory equipment.

The members of each department should have the training and experience upon which to decide what printed resources are necessary in accomplishing the work of the department.

6. The development of departmental curricula is based upon departmental or professional aims.
It is believed that the curriculum of a department is the primary means through which students attain their collegiate objectives. The curriculum is an explication of the departmental statement of aims and should, therefore, be based upon and derived from that statement.

The North Central Association of Colleges and Secondary Schools (106, p. 12) believes that the offerings and purposes of an institution should be correlated. It states: "The curriculum of an institution should contain the subject matter offerings implied in its statement of aims."

It was mentioned previously that institutions exist for different purposes. These purposes should be expressed in distinct statements of aims and objectives. However, there is no reason why the organization into departments in different schools should follow any fixed pattern. The practice should be that after the statement of aims has been formulated, the curriculum should be derived from the statement. This attitude was explained by Reeves (119, p. 189), in the Liberal Arts College.

Dr. W. W. Charters (34, p. 5), late Head of the Bureau of Educational Research, The Ohio State University, discussed institution aims:

This preliminary statement of aims is a prerequisite to both selection and use (of the curriculum). The inheritance handed down through the schools to the young is so massive that it can never be completely assimilated. Selection
is, therefore, necessary, and a basis of selection must be determined. This is obtained through the statement of aims.

Thomas (138, p. 134) stated:

The curricula in aim, offerings, and arrangement should be consistent and compatible with the functions to be served as implied by the objectives.

7. Departmental curricula undergo continuous study and revision.

"The curriculum of a department should be in keeping with the problems presented by the specific clientele and services needed by the constituency." Reeves (119, p. 196) made this statement as he discussed the point that society was changing continuously, and if the college or university was to serve efficiently it had to be free to revise its objectives and its curriculum. The American University has answered the demands of society and met the changes in social needs at several points in its development. This was accomplished primarily through curricular changes.

During a meeting of the Institute of Administrative Officers of Higher Institutions a Mr. Weaver (73, Vol. III, p. 12) said: "Eliot found our institutions of higher learning in 1868 poorly attended; he rightly judged that it was because they did not offer curricula attractive and effective in American life." It will be recalled that this was the period of the land-grant college movement.
Thomas (138, p. 134) found:

The curricula should be flexible in terms of student needs, interests, abilities, goals, and also in terms of changing professional, technical, and societal demands.

This practice is also recognized as valid by Reeves (111, p. 210) in The Liberal Arts College and in The Government of Higher Education (52, p. 199).

8. The program aids students in richly satisfying the demands for orientation and specialization.

Many authors consider the proper balancing of preliminary experimentation and final concentration as the most important practice of curricular organization. Thus, Weaver (73, Vol. III, p. 13) wrote: "The problem of curricular reforms is largely concerned with how can we sanely balance the interests of liberalism and specialization?"

Professor Robert L. Kelly (78, p. 60) formerly of the American Association of Colleges supported a divisional organization which encouraged later specialization. He urged the adoption of the opportunity for concentration and mastery in the junior and senior college years as a basic principle in curriculum construction.

Professor W. H. Wilkins (155, p. 16) in The Changing College, upheld the practice that curricular organization of an institution should be such that a student might explore the major fields and gain a mastery of one.
A. J. Rule (97, p. 7) former Pennsylvania Superintendent of Public Instruction wrote in the Proceedings of Annual Conventions of the Middle States Associations of Colleges and Secondary Schools that exploration and specialization were the essential parts of a true education.

Warner and others (143, p. 87) said:

Some industrial arts courses should be required of all students for purposes of orientation and for developing skills and insights. Later, for selected groups, no amount of diversity or intensity can be too extreme if consistent with college purposes.

Alfred North Whitehead (154, p. 26), noted philosopher, lecturer, and author, spoke for diversity in The Aims of Education:

The uncritical application of the principle of the necessary antecedence of some subjects to others has, in the hands of dull people with a turn for organization, produced in education the dryness of the Sahara.

Warner and others (143, p. 89) felt that orientation courses of both classroom and laboratory type should be the first need at the collegiate level. He thought that these broad offerings would provide initial contact and stimulation. Also these courses would bring groups into view whose common deficiencies and desires would answer perplexing questions as to what services the college should extend.

9. Supervision of departmental extra-class activities contributes to the attainment of educational objectives.
The student is in the classroom and laboratory approximately 15 to 30 hours each week. After an average amount of sleeping and eating is taken into consideration, half of the total hours each week are at the disposal of the student. Much of this time goes into extra-class activities on the campus. The first requirement of all such activities is that they aid the student to gain his educational goals.

Reeves (119, p. 387) stated that an extra-class program can be justified by the college or university only upon the basis of its contribution to the attainment of educational objectives.

Dr. Fred N. Scott (73, Vol. IV, p. 245) former Professor, University of Michigan, wrote that nothing should be done in the administration of extra-class activities which would prevent the consummation of those broad educational values, so real is their application in after college life. He felt that they were the primary reasons for the very existence of student activities.

The general secretary (101, p. 106) of Phi Delta Theta said:

The fraternity must always be a means to an end, and never an end in itself. The fraternity is an agent of education. The university is the whole -- the fraternity a part.

In *Extra-Curricular Activities in the Colleges of the United Luthern Church in America*, Beulah C. Van Wagenen
expressed the point that this portion of student campus life was fundamental to a worthwhile program. This practice was further verified by Artman and Fisher Edwards (50, p. 126) who completed a study for the Institute of Social and Religious Research on the question of extra-class activities. The first of three fundamental principles developed by them was the need for full recognition by the authorities themselves of the educational values of extra-class activities.

It was pointed out by Warner and others (143, p. 90):

Experience has shown that extra classroom activities of an institution may be effectively merged with the work of industrial arts. Services to the school, to the community, to the state, as well as to the students themselves, should be recognized as practical goals.

10. Departmental programs looking toward the improvement of instruction are founded upon research.

Colleges and universities have been accused of employing instructional techniques which are essentially "rule-of-thumb" procedures. Criticism of the results of higher education has called attention to these procedures. Also it has brought forward the question of their adequacy to perform the tasks assumed by higher educational institutions. Scientific attack on problems in other fields of human interest has suggested the application of scientific methods to the study of techniques of instruction in the college and university.
It is said that the colleges and universities are now subjecting every aspect of education to scientific tests. Certainly the scientific attitude should be basic to improvement in instructional procedures. Floyd Reeves and John Dale Russell (118, p. 308) held this viewpoint as early as 1929 in their book College Organization and Administration.

Dr. Lotus D. Coffman (73, Vol. V., p. 39) late President of the University of Minnesota, said that changes and improvement in instruction had arisen largely out of the entry of the scientific spirit and techniques into the field of education.

Warner and others (143, p. 90) wrote that general acceptance of a pattern, however worthy, should not be assumed or suggested. Too much stress cannot be placed upon the right, as well as the duty, of an institution to canvass the whole world of the arts for elements to fit its program. Thus they precluded the necessity for research at the instructional level.

Dr. Robert J. Leonard (87, p. 351) late Dean, School of Education, Teachers College, Columbia University, reported in the summary of the Survey of Higher Education for the United Luthern Church in America: "Intelligent work in the improvement of education must necessarily grow out of an experimental attitude."
Dr. Melvin E. Haggerty (79, p. 505), former Dean, College of Education, University of Minnesota, in *Higher Education in America* contended that any thorough-going attempt at improvement of college instruction has to be founded upon a program of investigation rather than upon didactics.

Dr. Donald P. Cottrell (39, p. 13), Dean, College of Education, The Ohio State University, in *Instruction and Instructional Facilities in the Colleges of the Lutheran in America* developed the theory of continuous educational research as the basis for the improvement of instruction.

In *College Teaching*, Dr. Joseph Justman (77, p. 37) Professor of Education of Brooklyn College, wrote:

Broadly defined, research activity concerns itself with discovery of knowledge, its organization and synthesis, and its orderly communication to a public competent to receive it. It may be conducted on the advance frontiers of learning or in the safer purlieus of the rear echelon. In either case it is an important collateral activity with teaching and one which every teacher should try to cultivate. The personal and professional effect of involvement in research is more important to the college teacher than the intrinsic worth of his discoveries. For the teacher cannot with propriety always be a dealer--even if a good one--in handed-down information. To maintain his vigor and freshness in instruction he must from time to time make contributions to knowledge which are his own. To evoke originality from students one must manifest some originality himself. The teacher owes a duty to himself constantly to keep some research going; if findings are publishable and time is available to prepare them for publication, so much the better. But this is not as essential as his own refreshment at the well of learning.
It will be noted above that for one to expect every instructor to be a research specialist would be a mistake. Many persons will be interested in research, others will not. The fact remains that "some concern with research helps nurture the scholarship that every college teacher needs" (77, p. 37).

II. The improvement of instruction rests primarily upon the instructors.

Ultimately, the only person who can improve instruction within a given classroom is the instructor who teaches there. Administrators and educational research men may guide and encourage the improvement, but it remains the duty of the man at work to apply the better methods of doing the work.

G. Stanley Hall former President of Clark University, wrote: (63, p. 81) "If the problems of university teaching were to be solved, it is the faculty who would have to solve them." However, the problem of discovering what is wrong with college teaching and how to tell and eliminate the hindering factors requires more than the time and energy of one man. The faculty, according to Hall (63, p. 84), must study its common instructional difficulties.

In the Problems of Higher Education, Franklin Freeman (159, p. 426) expressed the thought that there must be cooperation among the instructors of a faculty
and among the faculties of an institution in the building of well-organized studies.

The need for cooperation of all instructors in any program to improve teaching is recognized by the many institutions which have established regular conferences for department members, and the appointment of faculty committees to study instructional problems. For more than 25 years the University of Minnesota has had standing committees on problems of college and university instruction.

Dr. Arthur J. Klein (57, p. 113), late Dean, College of Education, The Ohio State University, in Problems of Higher Education wrote: "Studies of teaching in the Texas A & M College by the Federal government produced effective action and further self-directed study by the faculty."

A recent book, College Teaching by Justman (77, p. 31), contains the following:

The mark of the scholarly teacher is in the continuous quest of knowledge that he brings to instruction; even experienced teachers will admit that their earlier, more challenging experiences with a course were sometimes the best.... For that matter even familiar course offerings should be continually revised and, once in a while, completely revamped. The teacher is well-advised to examine his best course, to ascertain whether or not they have become too hardened and polished by use to retain their effectiveness without change.

12. The department has a program to encourage the continuing growth of its alumni.
Ordinarily one of the major objectives established by a department is the satisfaction of the needs of society. Consequently, one phase of its instructional work should contain some program to induce its former students to continue in intellectual pursuits. Many colleges and universities evidence the belief that the educational relation between student and institution is for life. Many writers in the field of higher education urge the institutions and especially the departments to encourage graduates to continue their educational efforts throughout their lifetime. This fact seems to be true especially among private colleges, which must depend on contributions in order to exist.

Dr. Charles F. Thwing (140, p. 41), former President of Western Reserve University and author of the first book on American College administration, said, with reference to alumni:

The American college cannot do too much to foster an intimacy of relationship between herself and her graduates. She loves them as her sons, she glories in them as those to whom she has given her life. No association between an institution and those who have received its benefits is so intimate, or should be so intimate, is so loving and loyal, as that which is found uniting a college and its graduates. The fondness of a college man for his college and the fondness of a college for its graduates, based upon a relation covering only four years, is absolutely unique among human relationships.

Professor George Little (12, p. 104), former Chief Librarian at Bowdoin College prominent among administrators and writers who have advocated the administrative
stimulation of alumni, suggested an "alumni university," to touch not only business and professional interests, but also those in the area of recreation. David Grant (60, p. 10) wrote in a similar vein. Other authors who have written in behalf of institutional interest in the continuing education of alumni are: W. B. Shaw (121) in Alumni and Adult Education, An Introductory Survey; Webster Stover (135) in Alumni Stimulation by the American College President and Lyman Bryson (24) in Adult Education.

13. Departmental objectives are compatible with those of the institution.

The derivation of this practice is contained within the writing presented in this report as practice number 2.

14. The program provides for the needs of the areas in which graduates are employed.

Modern society requires that every citizen must be equipped to contribute effectively to the welfare of the group. The highest possible welfare of the group can be achieved only if each individual produces the maximum of which he is capable. The number of citizens who can support themselves without productive work is reasonably small. Thus on a practical as well as theoretical ground, and from a social as well as an individualistic point of view, it is necessary to equip each graduating student so that he may contribute effectively to the community of
his employment. Improvements in the educational equipment of the individual so that he may make a greater contribution to society result in the general welfare of the entire group. There is a need, of course, to see that the types of education for which individuals are equipped are those for which society has real need.

The individual teacher must possess certain knowledge and skills which he may "sell" in the teaching market if he is to enjoy the highest personal development. Industrial arts teacher education departments are vitally concerned to see that an adequate supply of well-informed and well-qualified teachers is available in sufficient numbers to carry on the necessary programs of industrial arts in the public schools.

The immediate difficulty in the development of the industrial arts program to satisfy the needs of employment areas is the lack of a well-defined and classified list of area industries. The oncoming generation of teachers will distribute themselves intelligently among the various available teaching jobs only if they are provided with information showing the needs of the various areas. This information would be of value also in establishing the industrial arts program in a new community.

Staff Personnel. The ultimate purpose of all departmental administration is to facilitate instruction.
The teaching staff constitutes the majority of the personnel organization. Good education has always depended upon good teaching. One of the primary responsibilities of an educational institution is that of recruiting and retaining well-qualified instructors. In order to retain instructors a personnel organization must be so planned that it will serve instructors rather than make autom- tons out of them.

15. Administrative personnel within the department have authority commensurate with their responsibility.

Administrative theories on commerce, government, and education often hold that the placing of responsibility for action on a person or body must be accompanied by the authority and power to control factors which lead to the success or failure of that action.

Dr. William H. Newman (105, p. 168), Professor of Democratic Business Enterprise, Columbia University, in Administrative Action wrote:

It is customary to place limits on the action a man in a particular position may take with re- spect to specific types of transactions. All too often these restrictions are vague and become a source of friction within an enterprise.

Newman (105, p. 171) also pointed out that responsibility cannot be delegated and authority and responsibility should be coextensive.
In *The Internal Administration of the Liberal Arts College*, J. S. Kinder (81, p. 105) stated the practice described in this section as one of a series of eight included in his theories on the subject of authority.

Arthur Lefevre (86, p. 200), author of *The Organization and Administration of a State's Institutions of Higher Education*, wrote with reference to the authority of leadership: "His power should be commensurate with his responsibility, a valid principle always and everywhere for everyone commissioned to perform discretionary acts."

Dr. Charles B. Davenport (13, p. 148), former Director, Carnegie Institute, discussed the relationships between administrative officials as early as 1910 at a meeting of the Association of American Agricultural Colleges and Experimental Stations. He said: "Authority arises naturally out of responsibility and its nature and extent are defined by the sphere of that responsibility."

Newman said (105, p. 166): "If a man is assigned additional duties, the actions he is permitted to take should be correspondingly increased, and he should be held accountable for the new activity."

16. Administrative functions and their allocations are clearly defined.

Apparently it is an accepted theory of administration that the administrative functions of each staff member and of each group within the administrative organization
should have clear definition and allocation to avoid misunderstandings and overlapping.

Newman (105, p. 158) wrote:

Administrative organization, by its very nature, creates executive-subordinate relationships, and it also creates a variety of departments and divisions that frequently are intimately related. It is vital to good administration that these relationships be wisely defined and clearly understood.

In the Rutgers University survey, Arthur J. Klein (83, p. 56) reminded the university that the careful definition and assignment of functions seemed to be an extremely important preliminary to the development of the university.

In the Survey of the Methodist Church Colleges, Reeves (119, p. 86) a general analysis of the distribution of administrative functions which indicated that if enough colleges were visited, the range of duties performed by each of the major officers would be found to include the total scope of administrative responsibilities.

The above fact was substantiated by Kinder (81, p. 50). A questionnaire concerning the administrative duties of executives in 117 colleges showed that 47 of the 60 general administrative functions listed were performed by the president in from one to 48 schools.

Several writers and commissions, namely Leonard (87, Vol. II, p. 6), Potter (14, p. 212), the Carnegie Foundation (31, Bulletin 5, p. 17), and the Christian
Church Survey (37, p. 72), held that even an adequate staff can work efficiently only if the duties of each have been clearly defined.

Thomas (138, p. 132) developed the principle that the allocation of the industrial arts program should allow autonomy in administration and organization and that all industrial arts areas should be grouped together in the allocation of an administrative unit. He also felt that lines of authority should be established to insure maximum growth of industrial arts whenever administrative allocation is made within another area of the college.

17. Departmental executives delegate routine matters to assistants.

The executives of a department should be sufficiently free from routine matters to devote their best efforts to the solution of major problems pertaining to departmental operation and to the faculty. The greatest premium must be placed upon the products of the department head's thoughts. No executive can give his best to the department if his time is spent on minor routine details. These details should be delegated to properly trained assistants (105, p. 71).

In his book, The Elements of Administration, Urwick (142, p. 51), Director of the International Management Institute, Geneva said:
Without delegation no organization can function effectively. Yet, lack of the course to delegate properly and of knowledge how to do it, is one of the most general causes of failure in an organization.

In the Davidson College Survey (37, Vol. IX, p. 302), and in the Luthern Church College Survey (87, Vol. I, p. 34) the directors recommended that department heads delegate routine matters to subordinates without delay.

Thwing (141, p. 209) wrote:

A second commanding duty of the office of the future as it should have been in the past, is to give executives full opportunity to think.

Newman (105, p. 166) developed the following relationships created by delegation:

The process of delegation has three aspects:

1. The assignment of duties by an executive to his immediate subordinates.

2. The granting of permission (authority) to make commitments, use resources, and take other actions necessary to perform the duties.

3. The creation of an obligation (responsibility) on the part of each subordinate to the executive for the satisfactory performance of the duties.

In theory at least, the above three aspects of delegation are inseparable, and a change in any one of them normally implies corresponding adjustment in the other two.

Munroe (129, p. 85) wrote in Science:

College funds could in no way be made more productive than by giving department heads such clerks and underlings as would release them
from much killing drudery. There is no greater extravagance than to permit an ex-pensively trained man to do ten-dollar-a-week work.

The Lutheran Church College (87, Vol. I, p. 342) survey mentioned specifically the relieving of the dean of the minutiae of detail through employment of technical and professional assistance.

18. Executive powers of the department are exercised by the department head.

A basic principle in the administration of many institutions is that the legislative powers should be exercised by individuals. It has been said that the formulation of policy requires the deliberation of a group. Only in groups it is thought may the various elements among the governed have proper representation, and the various factors in the problems under consideration be given adequate expression. On the other hand, human experience is said to show that only an individual can effectively carry out the adopted policies.

Dr. John M. Pfiffner (111, p. 18), Professor of Public Administration at the University of Southern California, recently wrote A Manual for Administrative Analysis, in which he said:

There should be a hierarchy, sometimes referred to as the "scalar process," wherein lines of authority and responsibility run upward and downward through the several levels with a broad base at the bottom and a single head at the top.
J. C. Mooney and A. E. Reily (142, p. 124), English authors, in *Principles of Organization*, said of the "ultimate" authority:

As coordination is the all-inclusive principle in organization, it must have its own principle and foundation in authority, or the supreme coordinating power. Always, in every form of organization, this supreme coordinating authority must rest somewhere, else there would be no directive for any truly coordinated effort.

They (142, p. 124) went on to say:

Always there is the last link where authority ceases to delegate its own authority over others and simply delegates or assigns specific functions. The scalar process ends where it always must, in functional definition.

It would seem that the "scalar process" as described by Mooney and Reily differentiates between different levels or graduations of authority. Authority delegates part of its own authority over others. But, always at the end there is the last link in the chain where there can be no further delegation, and responsibility for the discharge of all actions rests with the "ultimate" leader.

19. Actions affecting individual members of a department receive the consideration of the departmental staff.

Actions, requiring staff consideration, affecting staff members, are normally those of a judicial nature. To sit in judgment upon the beliefs, upon the actions, upon the ability or work, of an instructor in an institution
of higher learning is one of the most important phases of administration. It is evident that the efficiency of the faculty as a whole depends upon the dismissal of an instructor for incompetence, or when guilty of gross misconduct, or of continued violation of institutional rules. The great importance of careful weeding out of undesirable staff members is one of the reasons given by many writers for advising that the departmental staff as a group he represented in the exercise of judicial powers over fellow staff members.

The statutes of Denison University (45), for example, make the termination of contract for incompetence or lack of sympathy with the aims and ideals of the institution an act requiring consideration of a departmental committee. Such statutes specifically allow the teacher to be heard in his own defense.

In the Journal of the American Association of University Women (5, Vol. XXI, p. 103) it was reported:

It is desirable that termination of a permanent or long-time appointment regularly require action through both a departmental faculty committee and the governing board of the college.

The reports of the committees of the American Association of University Professors (4, p. 390), and the committees of the "Washington Conference" (5, Vol. XXI, p. 104) sponsored by the American Council on Education, urged that this practice be followed.
20. Members of departmental standing committees are rotated regularly.

The use of committees, boards, councils, and similar groups as an administrative device may be traced to Greek, Roman, and other ancient civilizations. It has been particularly popular in Anglo-Saxon countries where it has often been regarded as an aspect of democracy. Yet, in spite of generations of diverse experience with the use of committees, there is probably no administrative device more commonly abused.

A committee consists of a group of people specifically designated to perform some administrative act. It functions only as a group and requires the free interchange of ideas among its members. Membership on a committee typically is only a part-time assignment. There are temporary committees, which are disbanded as soon as their particular missions are completed, and standing committees, which have continuing responsibilities.

Group judgment is particularly valuable when a wide range of experience and knowledge must be brought to bear upon a particular question. However, standing committee members cannot be expected to be experts in every instance, never grow tired, never make wrong decisions. To eliminate mistakes members of such committees should be rotated (105, p. 219).
Many institutions have used standing committees of the faculty in the exercise of executive powers of the internal administration. Reeves (119, p. 107) wrote: “Some presidents have deliberately built up the plan of administering their institution largely through faculty committees in order to overcome traditions of autocracy developed in previous administrations.” This was borne out by the report of the survey (161, Vol. VI, p. 59) of the University of Texas which stated that the faculty at the time of the survey was really an organization of a large number of standing committees (161, Vol. VI, p. 59).

Ernest Dale (42, p. 23), executive for the American Management Association, in Group Organization and Output wrote that careful psychological studies on the point of committees have been limited, but the evidence that does exist suggests that under favorable circumstances the answer arrived at by the group consideration is better than the answer any one member of the group would select if he acted alone. He felt this would be true with standing committees only if the membership was rotated from time to time.

21. The major responsibility for departmental representation rests with the department head.

The head of a department, because of the extent and intimacy of his contacts with every phase of work of
the department, is best able to make the needs and the services of the department known. The personal qualifications which make him a leader of the departmental personnel, enable him to meet the constituency and the general public as a representative of the department.

The University of Chicago Survey Commission (121, Vol. II, p. 43) expressed the thought that the real responsibility of the department head is to extend the official picture of his department to the public. In the eyes of the public he is the personification of the department.

Dr. Charles William Eliot (51, p. 231), former President of Harvard, reasoned that the department head must meet the public and build up a favorable attitude toward himself and the department, as well as the institution, by diffusing knowledge about them.

Thwing (141, p. 206) was convinced that leaders should accept opportunities for speaking on educational themes whenever possible. He also reasoned that instructors who possess the ability to speak in public should aid the department head by accepting lecture engagements whenever possible. The prestige of the department and institution is increased by the reading of papers and speaking before educational and professional organizations.

Kinder (81, p. 359) in his study of the allocation of the functions of internal administration found the
majority of the institutions studied expected the faculty and student body, whenever possible, to cooperate in community affairs as representatives of the institution. Similar statements were found in the report of the Methodist Church College Survey.

22. Statistical studies of student records and other academic facts for the guidance of the department head and staff members are centralized under a staff member responsible to the department head.

The records in the registrar's office are the basis upon which students are advised on many questions of their college careers -- what vocation to follow, what courses to take to aid in preparing for that vocation, the amount of classwork to be taken in a given period, and so on. These records must give as complete a picture of the individual as possible. However, it is not enough to maintain a centralized record system in the average institution. Each department should have a file concerning each major. Only by knowing the "whole" individual can the institution or department hope to guide him correctly in the educational world.

The greatest benefit from statistical studies of the activities of the department will be derived when such studies are centralized with a staff member who possesses a perspective of the entire department. In the institution this is ordinarily the registrar. In the department
the secretary should maintain such records as experience has proven adequate, under the direction of a staff member responsible to the department head. If the institution has a statistical bureau that division should be utilized.

Dr. H. L. Helton (67, p. 26), former graduate student at Wayne State University, found in his survey on Accreditation of Industrial Arts Teacher Education:

The department should maintain an individual file of cumulative information about each student classified as a major.

Among authors who urge the centralization of statistical studies are, Justman (77) in College Teaching, Melby (96) in Administering Community Education, and Newman (105) in Administrative Action.

23. Faculty members are encouraged to participate in professional research and publish their findings.

Students of higher education are awakening to the need for studies of the financial, the instructional, and the personnel work of colleges, and universities, and of the administrative problems connected with these phases. It is now considered by many as an important function of internal administration to organize the faculty, or separate agencies, to carry on educational and administrative research, and to supervise and coordinate the efforts of all parts of the organization engaged in such research.
Many individual faculty members and faculty committees carry on investigations concerning instruction and administration. Some of the large institutions have an administrative unit or bureau of educational research which coordinates the work of individuals and carries on such investigations as are suggested by administrative problems. The Bureau of Educational Research at The Ohio State University is illustrative of such an organization.

Writers have stated that the instructors should carry on these research activities and not some organization within the institution. S. L. Lane (111, p. 210), Professor of Education, University of Southern California, suggested the use of a faculty committee organized for studying educational and administrative problems. Haggerty (79, p. 506) also drew attention to the need for broadening the research base within the faculty to include as many instructors as possible. He wrote that an effective program of administrative research was a cooperative affair. The Survey Committee of the American Association of University Professors on College and University Teaching (4, p. 210) reached the unanimous conclusion that the initiative in research should be taken by the college teachers themselves. Thomas (138) stated that staff members should carry on continuous research problems individually.
Lane (ill, p. 210), in an address before the National Association of State Universities, formulated the principle that while it was the instructors who must carry the burden of the actual research, the coordination and, perhaps, even the direction of such studies, was a specialized task, and called for trained investigators.

Haggerty (79, p. 506) felt much the same as Lane with regard to instructors as research specialists. He wrote:

The methods of accurately evaluating their own work as teachers, and their personal judgments, are no more to be trusted than are those of other intelligent men. The instructor's deficiency in this matter must be supplemented by the technical skill of someone trained in the techniques of educational investigation.

Regardless of the method to be employed by instructors doing research, it can be seen that it is valid to expect the faculty to participate in some form thereof.

24. Responsibility for the organization of the department is vested in the department faculty.

There is a close relationship between the formulation of the aims and objectives of an institution and the departmental organization which is established to attain the stated objectives. Since many of the writers in the field felt that it was the duty of the faculty to develop the aims and objectives of the institution, they also felt it was the duty of the departmental faculty to develop the
organization of the department. It was held that the knowledge of the instructors in the various areas gave the group a peculiar fitness for the task of constructing and coordinating the organization of the department.

Each instructor should take an active part in the determination of the educational processes in order that he may understand the problems of the department and become more effective in terms of organization. It is contended that every instructor has something of value to contribute to the broad policies of the department.

Thomas (138, p. 133) reported:

Industrial education staff members should be represented in policy making and other decisions affecting their welfare; both in the department and the general college.

Helton (67, p. 25) summarized his findings concerning this practice:

All departmental staff members should participate in administrative decisions which affect the quality of the departmental program.

Anderson (9, p. 95), while Director of a Survey of the Oregon State System of Higher Education, wrote:

It is contended that faculty members are happier, more loyal, and more effective if they have a significant part in determining policy in their institutions. This does not mean that they should assume administrative functions, but they should have opportunities to participate in determining policy. The administrative officers need constantly to seek the thinking of the faculty in matters of policy, especially those matters affecting the curriculum, the students, and the faculty personnel problems.
25. The department head is selected by the departmental staff. If your answer is yes, do you support such a policy or practice?

A few writers believe that the departmental staff should select and nominate for appointment, the head of the department. A number of faculty members consider that the objectives of higher education would be attained more fully if the administration of the affairs of the department were carried on under the direction and leadership of a man elected by his own staff. This conviction on the part of the professors scattered over the nation was attested by the communications received by Dr. J. McKeen Cattell (33, p. 186), former Professor of Psychology, University of Pennsylvania, as early as 1913 and reported by him in his text University Control.

The department head is intimately connected with the success of the educational work of the department. Logically, he should be selected by persons who understand the aims and methods of higher education. By persons who know and can recognize the qualifications which an individual should possess to perform properly the necessary administrative functions. Some writers stated that college trustees often appointed department heads, a practice to be avoided. They are convinced that this group understands neither the needs of education for administration nor the necessary qualifications of an educational administrator. They are convinced also that the faculty
understands these things to a greater extent than is possible by an outside group. The instructors, being always on the job and just as thoroughly in touch with educational problems as the department head, should select the leader.

In 1957 Thomas (138, p. 137) found: "The staff should participate in the selection of the department head."

The Thomas and Cattell reports are separated by 45 years, yet the feeling among staff members is that they should choose their administrative head. It is generally known that this is not the practice. To verify this remark, the statement "If your answer is 'yes,' do you support such a policy or practice?" was added to the general statement of practice. This statement will be discussed more fully in Chapter VI, Findings.

Committee "T" of the American Association of University Professors, in 1935, reported a study of "The Place and Function of Faculties in University Government" (4, p. 184) which stated emphatically that faculties or units administered by deans should have a voice in their selection. President Alexander G. Ruthven (76, p. 9) of Michigan, while in office, expressed himself as being in favor of giving the faculty a voice in the selection of their leaders.
26. The departmental staff and the college administration both participate in the selection of a department head.

There was such a wide divergence of thought among writers concerning practices 25 and 26 that both were included in the inquiry form to provoke discussion. The comments pertaining thereto will be presented in Chapter VI, Findings.

Many authors in the literature of higher education considered that the executive officers of the various academic subdivisions of colleges and universities had important relations with both their own faculties and the institutional officers. Therefore, they should receive their appointments in some form of joint action of the departmental staff and the institutional administration.

Dr. Raymond M. Hughes (101, p. 72), former Professor, Iowa State College, wrote: "It would seem that deans and division heads should be selected by the president after consultation with the faculty."

Dr. Henry Suzzalo (101, p. 95), former President of the University of Washington, wrote:

They are not mere representatives of the opinion of their fellows. They are also in charge of enforcement of all policies, regardless of whether they come from the regents, faculty, departments, college curriculum groups, or administration itself. At any rate, their function is dual.

The chairman of each department in a higher educational institution should not consider his position solely
educational but essentially administrative. This was the opinion of Lefevre (86, p. 251) and Kinder (81, p. 103).

The chairman should emphasize the advisory and leadership phases of his work, should see his position as a colleague, and not as a "boss," of the instructors in his department. His task is not so much to get things done as to lead in their accomplishment, perhaps by his own example rather than by his orders.

Dr. Wallace C. Sabine (4, p. 223) of the National Office of the American Association of University Professors, reported:

Like other administrative officers, the head of a department stands in a two-fold relation, to the members of his own department on the one hand, and to the dean of his college or the president of the university on the other. Consequently he should be chosen by a joint action of the administration and staff.

27. Qualifications of department heads and staff members include professional and specialized training in the field of industrial arts.

There is a widespread and definite recognition in the literature of the practice that the institution should demand of each administrator, specialized and professional training in his own field. Archie M. Palmer (109, p. 293), former editor of the New York Tribune, noted that many universities offer winter and summer courses specifically designed for training administrators and prospective administrators of higher educational institutions.
Dr. Trevor Arnett (10, p. 8), the Survey of the Commission of the Methodist Colleges (119, p. 435), and Lindsay and Holland (89, p. 77) among others, listed various necessary qualifications pertaining to training and experience which should be demanded of an administrator in an institution of higher education.

Gillis (2, p. 107), and Dr. Henry S. Lehr (2, p. 59), founder of Ohio Northern University, stated that specialized professional training was needed in administration and that Hunter College organized one of the first courses (1931) to provide such training.

The practice, as related to the publicity director, was advocated by Frank Elliott (52, p. 132) in the Government of Higher Education, by Dr. Bland L. Stradley (106, p. 10), former Vice-President, The Ohio State University, in the Quarterly of the North Central Association, by Klein (82, p. 89) in the Survey of Land-Grant Universities and Colleges, and by Thomas (6, p. 44), Lindsay and Holland (89) reported that many institutions had adopted such a practice, and operated a publicity office headed by an experienced journalist.

The demand for the inclusion of technical training among the qualifications of the librarian and library staff was made by George A. Works (160) in College and University Library Problems, and by an editorial writer (8, p. 68) in the Bulletin of the American Library Association.
Kinder (81, p. 109) supported his ninth "guiding principles of internal administration," by writing:

Administrative officers should be specialists in their fields of work, just as professors should be specialists in the subject which they teach. It is difficult to specialize in both fields.

Kinder's extensive documentation of his principle supported the statement of practice as derived.

28. The departmental staff possesses a cultural background and the preparation adequate for the attainment of the educational objectives of the department.

In the literature there are numerous references to the need for cultural background and academic training in the work of the instructors. It means that these persons must be more than bookkeepers, catalogers of books, and so on. It points to the recognition that every phase of institutional activity and every person, must move toward the attainment of the objectives of the institution.

References cited called for special attention be given to the education of the head librarian, of the chief academic bookkeeper, and of the athletic director. But if the goals of the institution are to be educational, the persons subordinate to these heads, must attain the general academic and cultural background of the scholar.

Diekhoff (48, p. 46) in his Domain of the Faculty, wrote:

The college teacher should be broadly educated if he is to contribute to the general
education of his students and if he is to view his own special interests with proper perspective. He should have a philosophical habit of mind, and his philosophy should include an understanding of the purposes and processes of education and the part that schools may play in education -- the part that other institutions play. He must be expert in the subject he professes. He should be skilled in the arts of pedagogy.

McVey (2, p. 431) wrote that the registrar moved in 15 years from "a bookkeeper and secretary of records and grades to an officer who is really interested in the academic procedure." He said also that he noted a change in the additional scholarship in the registrar's office.

Lindsay and Holland (89, p. 77) maintained that the business officer should be trained in the educational problems facing the institution. The literature (106, p. 190) made some interesting comments concerning the need for cultural and academic background in the work of the business manager, the coach, and the athletic director. Gage said that coaches, being established as members of the faculty and teachers, should certainly be men whose professional qualifications were perfectly definite and whose comprehension of the educational program as a whole fitted them for the fellowship of labor on the college faculty. Stradley (106, p. 55) said that administrators had not insisted upon desirable academic standards in the athletic departments.
Thomas (138, p. 136) wrote: "Each staff member should have adequate education for and experience in the area which he teaches."

It is apparent that instructors in undergraduate colleges should be broadly educated, civilized people. They should have a philosophical habit of mind. They should be learned in the subjects they teach and with the people they teach.

29. Job specifications and standards relating to faculty performance are formulated as a guide for appointment and promotions.

One of the most widely recognized practices of faculty building is that a general pattern or idea of the faculty organization should be in the background of every change in faculty membership. This means there must be a clearly defined plan of the faculty composition and organization in definite relation to the educational objectives of the institution. This idea must be clear to the board, the faculty, and to the administrative officers. Each change in the personnel must constitute an opportunity to move toward the ideal organization. In this connection, Dr. Everett Kimball (4, p. 312) former Professor of History, Smith College, wrote that no instructor should be recommended without careful consideration of the groups into which he is to be placed. Reeves (119, p. 298) maintained that no school could establish a successful faculty without first gaining an idea of the teaching staff as a whole.
This general plan should be consulted in the establishment of the faculty in every department. There should be no favored departments. Dr. Robert M. Hutchins (121, Vol. III, p. 4), former President of the University of Chicago, wrote of this need for a general faculty plan for appointments in all departments.

In some of the teaching domains there will exist competition from industry and other external fields which will affect the choice and promotion of instructors.

The members of a faculty should be recruited in a variety of ways. The aim, of course, to provide a balanced organization. This will demand that not all the instructors in a department, and not too many in the institution, come from the same graduate school. It is thought that a faculty will be stronger if its members represent the schools of thought developed in many different graduate schools.

The argument against drawing all the faculty members from one graduate school, or promoting graduates of the institution through the ranks to fill the professorships, is the fear of inbreeding, and the probable resulting stagnation of the faculty. Eliot (51, p. 90), and Lefevre (86, p. 261) mentioned specifically the dangers of inbreeding to the balance and vigor of the faculty. Campbell (30, p. 222) wrote with regard to staff composition:
To guard against provincialism, a board might also decide that no more than one-half, or another appropriate fraction, of its staff should be home-town persons, or graduates of one institution.

Job description is basic to selection. It is desirable that there be a job description available for every vacancy. Campbell (30, p. 223) wrote:

This description should include the subjects for which the instructor is needed, any specialized skills which are necessary or desirable, and any personality traits which are needed for success in the position (degree of performance required for permanent tenure).

30. Probationary appointments are followed by tenure when the college is assured that the teacher is adapted to his assigned work.

It was the opinion of many writers that appointments to a university staff should be of two types, temporary and permanent. In the best interests of both the man and the school, the first appointment should be temporary. Nearly all forms of industry recognize the necessity of a longer or shorter apprenticeship before permanent employment. The position of the new instructor could be considered the future professor's apprenticeship. It is important that these new instructors have the opportunity to try their capabilities in classroom work and to prove their worth as teachers and research men before entering college teaching as a career. The probationary period also works to the advantage of the institution for it allows the department to observe carefully the work of the instructor. Thus, at
the close of the probationary period the most promising
teachers may be made on permanent tenure.

Eliot's *University Administration* (51, p. 101) and the
statement of policy of the Board of Trustees (45) of Denison University both contain expressions which agree with this system. The commission (121, Vol. III, p. 267) which surveyed the University of Chicago stated that "the survey staff believed that all first appointments should be limited to definite." In the same report (121, Vol. III, p. 74) it was found that "permanence of tenure for those in the upper professional ranks is usually regarded as the most effective defense against invasion of personal and institutional independence in the search for truth."

In the Domain of the Faculty, Diekhoff (48, p. 78) presented the following illustration of tenure:

At Hunter College an appointment for a fourth year carries tenure with it. It may be that in colleges where tenure comes so early, the first year of a tenure appointment is the best time for a somewhat formal in-service faculty training program. The world looks rosy then. The degree is finished. The materials of the courses taught have been mastered (too often for all time). Gaps between senior and junior colleagues have closed somewhat. The fear of inspection has disappeared, for the probationary status is ended.

Diekhoff (48, p. 97) also presented the case for tenure:

The professor without tenure, without the guarantee of academic freedom, may be subject to the whims of the judgment of administrators, trustees, and taxpayers, and the vagaries of political, social and economic popular reeds
and slogans, to religious bigotry and bias. Unless his opinions and conduct change with changing international relations, changing economic conditions, and the alterations of political power, not because he learns and changes his mind but because he is adept at reading the handwriting on the wall, he must fear for his job.

In *College Teaching*, Justman (77, p. 68) wrote:

The probationary period, usually at least three years' duration, should be made a rigorous test of a young teacher's capability and longer-range promise. Success should earn retention. Current practices tend to be inconsistent: on the one hand, some institutions release all but the most brilliant newcomers after a few years of service, while in other, retention after a nominal probationary period is almost assured if the young teacher "seems all right."

Academic promotion policies are also in need of reassessment. The need for considering skill in teaching as a factor in promotion is self-evident, and in principle more and more colleges have come to accord in equal ranking with scholarly attainment.

In reference to the above an editorial writer (102, p. 172) in the *National Education Association Research Bulletin* wrote:

But good teaching is not as measurable an accomplishment as productive scholarship, and the practical result is to tip the scales in favor of the latter. This is professionally unfair and unrealistic. Without withdrawing recognition of acknowledged scholarship, promotion standards should in practice include good teaching and other professional attainments.

31. Criteria of worth and fitness of faculty members include training, experience, teaching and research experience, and personality.
Successful faculty recruiting must take into consideration qualifications which are thought to give promise of an effective instructor in higher education. Lindsay and Holland (89, p. 409) listed four such qualifications: (1) the ability to produce professional work in his field, (2) the possession of higher degrees, (3) experience in the classroom, and (4) personality. Eliot (51, p. 90) listed as criteria of worth as a faculty member: (1) the candidates college record, (2) his reputation as a scholar, (3) his activity in learned societies, (4) his productivity as an investigator and author, and (5) his general repute as a man of character.

The North Central Association (62, p. 1), in its reorganized procedures for accrediting colleges and universities, endeavored to obtain a picture of the relative worth of the faculty along lines similar to those above. The factors which this organization now consider vital concerning staff members are related to: (1) the degree held, (2) the number of years of graduate study and of experience, the publications, and (3) the interest in learned societies.

The University of Chicago Survey Commission (121, Vol. III, p. 23) listed criteria which are essentially those noted in the North Central Association Handbook. Lefevre (86, p. 260), in briefer form, called attention to the need to consider the whole personality of the
prospective and in-service faculty members as well as professional attainments, skill in teaching, and research. As early as 1925 the University of Michigan (109, p. 24) established specific requirements for the appointment and promotion of its faculty members along the lines of the North Central Association, except that it raised the qualifications in the area of research.

It should be remembered that professional growth is not a one-sided undertaking. For its part the college has important obligations to fulfill if it would help the teacher realize his professional potential. It has influence and prestige carrying beyond the physical confines of the institution, and resources above those of material possession. The corporate life of the college should be so conducted as to encourage the development of students and instructors (77).

32. The principal criterion for promotion of a faculty member is the successful performance of his duties, whether instruction or research.

A principle found to be operative in the promotion of faculty members in many institutions was that the criteria for research men and instructors of graduate classes should not be the same as those used in promoting men employed primarily to teach undergraduate classes. This was more strongly emphasized with the establishment of broad survey courses in the lower division. The general
overviews of large fields require a breadth of training surpassing that required under the older conception of undergraduate education. Lindsay and Holland (89, p. 428) took this position also when they commented on promotional procedures for instructors:

There can be little question that too much emphasis is being placed upon research in the universities of the United States as a basis of selection and promotion of instructors. With a large enrollment, fostered by a democratic ideal of higher education, there will be for a long time, a majority of students whose major need will be effective teaching. The answer to this need is for a great number of instructors whose primary duty is to teach. These men should not be burdened with the demands of research activities to gain promotion. They should be free for the task of teaching, and should be promoted primarily for this successful work as instructors. On the other hand, those who are especially gifted as research men and whose instructional duties are with advanced classes should be promoted on a basis of their successful performance of this duty.

Justman (77, p. 66) wrote with reference to this point in College Teaching:

Those interested in dedicating themselves to productive scholarship should not make the commitment lightly. The exercise of productive scholarship is exacting, requiring an abundance of energy with which to satisfy also concurrent teaching obligations. If by temperament he finds intensive application to a long-term task irksome, perhaps he should explore other more promising avenues of service.

Diekhoff (48, p. 86) felt that "good work" to be rewarded should include all the kinds of work the faculty member is called upon to do. Diekhoff continued on this point:
Even a promotion policy which consistently places undue emphasis on some one identifiable phase of the profession (the usual charge is that only publications count) is better than no policy. The formulation of the criteria for promotion should recognize the scope and variety of the professor's duties. If scholarship, teaching, and committee and other extraclassroom duties are all to be given due value by a faculty, they must be explicitly included in the criteria for promotion and must be considered in recommendations for promotion.

A report of Committee "B" of the American Association of University Professors (4, p. 201) described the ethics of a situation which demanded scholarly output and yet denied the salary and leisure time needed to carry on both instruction and research.

Teachers should be judged upon the basis of their effectiveness in the work assigned to them, instruction or research; "Good teaching we are often told, should be recognized and rewarded on its own merits, without reference to what the teacher does or fails to do in his non-teaching hours," (4, p. 53).

Student Personnel. While present-day educational institution reports contain the standard statistics of progress, attendance, and absence, they are nevertheless enriched with data indicating an increased interest in matters of student health, social adjustment, intelligence, aptitudes, interests, vocational ambitions, and personal problems. It is apparent that a new concept exists among twentieth century educators regarding the functional relationships between the institution and the student.
33. Personnel records are made for each applicant at the time of his departmental admission.

The derivation of this practice is contained within the writing presented in this report as practice number 22.

34. A complete record of essential academic facts is readily available to the departmental staff.

The derivation of this practice is contained within the writing presented in this report as practice number 22.

35. The operation of extra-class activities allows a high degree of spontaneity and self-direction on the part of the students concerned.

The foremost educational values urged for extra-class activities are the opportunities presented for training in such things as cooperative living, self-reliance, self-sacrifice, courage, and, above all, honesty. The extra-class program offers a ready channel for the utilization of the spontaneous interest and activity of youth to develop these characteristics of strong and worthwhile personality within themselves. A strong argument for college athletics has been that such activities aid the student to develop such ideals. No one doubts that under proper conditions many of the values of education for social living are to be found in the participation in athletics. In the Carnegie Foundation Study of Athletics in American Colleges, conducted by Dr. George M. Savage (31, p. 300), former President of South Western Baptist University, the problem of
attaining the socialized objectives was discussed. The conclusion reached being that: "The entire athletic activity of the college should be so reframed as progressively as possible to increase the amount of responsibility sustained by the undergraduates for the athletic program." A similar plea for the entire extra-class program was made by Van Wagenen (145, p. 144).

Students and faculty have come to share in the administration of certain extra-class activities to a considerable extent. It is not uncommon to find the student government association vested with the authority to assess student activity fees, pass on charters for new organization, rule on the eligibility of nominees for offices of campus organizations, handle campus drives for charitable organizations, and in general supervise and coordinate the activities on the campus. Many colleges have student-faculty committees on student affairs which supervise the activities program.

Louise Price (13, p. 259), former graduate student at Columbia University, in Creative Groups on the Campus, reported that at Stanford University since 1921 the control of student organizations and their finances had been gradually centralized in the hands of the Executive Committee of the Associated Students, which operates with faculty consultation. At Mt. Holyoke College (100, p. 29) the Advisory Committee on Finance is a joint student-faculty group.
36. Student extra-class activities are supervised and coordinated by a permanent staff member responsible to the department head.

Institutional supervision is recommended for extra-class activities on the well proven theory that it is necessary if any organization or activity is to accomplish all that it might. Of course, too much supervision is almost as bad as no supervision, because it may stifle spontaneity and make it difficult for the students to develop initiative, leadership, and followership.

Supervision is recommended also because it will protect the reputation of the organization, of the individual members of the organization, and the institution. Whenever any activity is conducted in the name of the institution, or whenever any institutional organization holds a meeting, school officials and employees must assume a certain responsibility. This responsibility comes whether the activity or the meeting holds forth on the institutional premises or elsewhere.

Among the writers who accept the principle that extra-class activities should be coordinated under a permanent staff member are Doerman (49, p. 44), and Van Wagenen (145, p. 145). Van Wagenen wrote that only through the coordination of the extra-class work of the department by means of an administrator can the educational values which are worthy be developed. The third principle formulated by the Institute of Social and Religious Research
(50, p. 127) in the study of undergraduate life was that the institution should make available to all students, counsel and guidance in their extra-class activities, and that the extra-class activities should be coordinated in the office of a director.

37. The degree of attainment of educational objectives by a given student is measured by criteria other than credits and grades earned during his residence.

Some writers criticized the evaluation of instruction by the method of counting credits and grades. They stated that procedures which are more in consonance with the educational objectives of the institution should be developed and used. The various plans of honors courses, with the granting a degree dependent in some measure upon a final comprehensive examination over a major-field, or over all the work offered for the degree, are possible answers to this demand. Chicago University, and Harvard University, and other institutions have applied this principle in the attempt to measure the attainment of institutional objectives in a more scientific manner.

Lambert (97, p. 43) condemned "the traditional point and credit system for measuring educational programs." Boucher (97, p. 31) alluded to the "old time-saving, credit-counting method of measuring student attainment for the bachelor degree." Dr. Raymond W. Bixler (2, p. 123), former Head, History Department, Ashland College, implied
that institutions based the evaluation of instruction too much upon the theory of credits. Dr. Thomas Dempster (2, p. 31) former Professor of Humanities, University of Bologna, condemned "the practice of determining a man's fitness for the bachelor's degree on the number of point-credits he has acquired."

38. Counseling of students is conducted by instructors on an individual basis.

Many writers on higher educational administration felt that instructors were the proper persons to advise students. In the case of a student who has to make a choice of career, this argument has special force. The instructors in the student's major field are specialists and, at least in scholastic matters, have information at hand upon which the student can base his decision.

College education has come to mean not solely intellectual training but the balanced development of the whole person. Providing the right cultural climate and organized civic, cultural, and recreational activity has become as important as offering proper courses of study. A concomitant development has been increased recognition of the distinctive needs of the student as a person and member of a social group. A person is rarely so self-sufficient that he does not at times lean on outside advice or support, especially in crises calling for specialized resources in knowledge and skill. Some types of
specialized personnel activity are vested in instructors not primarily career workers, but qualifying by virtue of aptitude, interest or desire to be of service.

Justman (77, p. 41) wrote:

A large share of less specialized activity is performed by teachers either as an additional duty or on special assignment for which deduction of teaching load is made. Commonly this activity represents some aspect of broader educational counseling -- helping students to formulate a college plan of study, advising on course and study objectives, assisting with problems of academic adjustment, or acting as institutional mentor for one or several students.

The Oregon Survey Commission (84, p. 277) discussed various questions of guidance, including the question of by whom should students be advised. Their conclusion was: "The problem is one of personal interview, conference, and relationship between student and staff member." Staff member in this case referred to the instructor. Arnsdorf (2, p. 160) held that faculty advisors, using the admissions data from the registrar's office, are the best media of student guidance in the several phases of student personnel work.

39. The administration of guidance consists of full knowledge of the characteristics and progress of the individual.

To a very great extent, the question of whether a student succeeds or fails in attaining the objectives for which he entered the college or university depends for its answer upon the efficiency of the guidance accorded him in
the choice of curriculum, in the selection and pursuit of his studies, and in the social contacts of social life (84, p. 257). If student characteristics were identical, or classifiable in certain general groups, the importance of guidance would be lessened. But no two students are alike, and the counselor is confronted with as many types of students as there are individuals (86, p. 326). The wide range of individual differences presented by any class or group of students forces upon the institution the obligation to discover to the full, the characteristics of each individual, and to base the counseling program upon this complete and personalized information.

The success of the individualized guidance program, according to Hopkins (7, p. 26), and Reeves (119, p. 371), depended to a large extent upon personal interviews, conferences, and relationship between the student and his faculty adviser. Such interviews were based upon the counselor's knowledge of the students characteristics and progress. The knowledge of individual differences, in the guidance program was given importance in Dr. Edward L. Thorndike's (40, p. 308) definition of vocational guidance as "The scientific study of matching and individual differences of humans to the differences found in the world."

On the basis of their experience at Antioch College, A. D. Henderson and D. Hall (68, p. 155) wrote the book, Antioch College, in which they said:
Young people of college age and of good ability and intelligence, with adequate counseling available and a strong sense of institutional direction, can go ahead on their own much further than the usual college program takes them.

A survey of the literature on, and of the organized programs of guidance, manifests that there is a divergence of opinion on what constitutes the scope of guidance. A few writers on the topic have used the term as synonymous with education. Best known among the authors who have adopted this broad conception is one of the pioneers in the guidance movement, Dr. John M. Brewer. In one of his books, Education as Guidance, Brewer (23, p. 2) said:

The word guidance is frequently misconceived; it is best understood through the concept of self-guidance, its ultimate aim. "Do you not teach as guidance the idea of taking responsibility for others?" asks one critic. We do not. Guidance is neither adjusting or suggesting, neither conditioning or controlling, neither directing nor taking responsibility for anybody...Educate the on-coming generation we must, and a true education, as we shall try to show, means guidance. By the process of guidance we put the responsibility where it belongs, on the individual being guided, as fast as it can be done without running the risk of abandoning him to crass ignorance and to the misguidance of active influences ready at all times to do him harm.

40. Student personnel activities are coordinated through the centralization of records.

The derivation of this practice is contained within the writing presented in this report as practice number 22.
41. Guidance administration makes definite provision for follow-up interviews to check on the reaction of the students to the counsel given.

It is said that one of the weakest points in counseling, as practiced in institutions of higher learning, is that inadequate attention is paid to checking the results of interviews between students and advisers.

Several writers urged that the counselor arrange for later conferences with each student he advises in order to follow-up and reinforce the advice given. The matters which students bring to their advisers for solution are often of such complex nature as to require help and encouragement over a period of time as the situation develops.

May (37, p. 267), in his report to the Christian Boards of Education, listed ten major considerations which guidance should meet, among which was the statement: "In most cases of counseling upon a serious point, a series of interviews is necessary."

It is also the business of the department head to have investigated all cases of withdrawal and non-reregistration to discover if the individuals severing their connections are not actually capable of benefiting from that type of development for which the department exists to provide, and whether the department cannot be of further assistance in the education of these individuals.
It is well to keep in mind in the follow-up of students that one must assume that the results are related to the service rather than to some other cause. It rarely happens that one can compare a group covered by the service with a comparable group not covered.

The University of Chicago Board of Business (121, p. 2) furnished examples of follow-up studies of withdrawals and non-reregistrants. The dean reported that this procedure had been the means of retaining in the University many promising students who would have otherwise discontinued their education.

42. The guidance program includes provisions for following-up all students who withdraw or fail to re-register.

The derivation of this practice is contained within the writing presented in this report as practice number 41.

43. Freshman-week programs are based upon the immediate interests and problems of freshmen in the department.

A program of freshman guidance which works splendidly in one institution may not fill the needs of students in another. Each group of students presents a complex of interests and problems growing out of geographical distribution and other social and economic differences due to family background. These interests and problems change from year to year as the social influences change.
The emphasis should be placed upon the immediate problems which the student is facing, as Doerman (49, p. 133) recommended in the *Orientation of College Freshmen*. He (49, p. 134) also said, "one of the immediate problems of the freshman is to see the relationship of his purpose and interests with the objectives of the four-year program of the college."

J. Carroll Knode (85, p. 126), in *Orienting the Student in the College*, and the Methodist Colleges Survey Commission (119, p. 363) drew the conclusion that careful and continuous study was necessary in order that the freshman-week program be adapted to local needs and individual students.

**Finance.** The competence of the men and women who occupy key positions in institutional organizations decides the progress and efficiency of the entire program of American higher education. It is well known that the problems confronting institutions of higher learning in recent years have multiplied enormously and have become increasingly acute and complex. The financing of higher education has become one of the most crucial problems. The educational programs which are needed so badly at the present would be impossible without the funds to provide instructors, equipment, buildings, and other necessary items.
All budgetary requests from the department staff are assembled and approved by the departmental head.

Although the institutional administrative authority has the ultimate responsibility for approving or disapproving the budget recommendations, it should be the duty of the department head to see that the tentative budget is prepared for presentation to the college authorities. The preparation of the budget should involve the cooperation of all persons who can contribute. Educational needs and proposed programs should be matters of constant study within each department, as well as the institution as a whole. As the program develops, they become matters for which provisions in the annual budget must be considered.

The preparation of the budget should be a continuous process because the planning of the educational program should be continuous. The execution of the budget should be flexible. The budget is not only an estimate of income, but an attempt to distribute the income among the many activities of the department so that the department may perform the greatest possible service. The income may, and generally does, vary during the period for which the budget is estimated. The needs of the department and the relative importance of various activities may also change with the same period. There must be provisions for emergency expenditures. Reeves (119, p. 467) wrote: "An education institution must not look upon the budget as an
absolutely iron-clad device." The University of Chicago Survey Commission (127, p. 98) reported that: "The budget should be sufficiently flexible to permit adjustments to new conditions as they arise during the course of the year." Arnett (10, p. 88) thought the budget should be revised four times per year to allow for emergencies and obsolescence. On the surface this recommendation would appear excessive.

Campbell (30, p. 402) wrote: "After the preparation of the budget, its administration is generally regarded as an executive responsibility."

The budget, when complete (except for necessary changes due to limitations of income and coordination of activities) should represent the needs of the separate areas and activities of the department. These needs are best known to the instructors in charge of the various areas, and therefore, the first limitation and coordination of individual desires and needs should be made by the department head.

The Rutgers Survey Commission (83, p. 64), the Land-Grand Survey Commission (82, Vol. I, p. 163), the North Central Association on Accrediting Procedures (127, p. 95), and Arnett in College and University Finance (10, p. 64), all gave support to this principle. For example Arnett (10, p. 78) wrote that the details of the budget for each department should be supplied to and approved by the person in charge of the department.
45. Budgetary control covers all departmental activities.

It seems reasonable to expect that the financial and educational control over the operation of activities should extend to every area and service authorized by the department. This is not always the case, and difficulties often arise when some activity which is undertaken for the department or for which the department can in some manner be construed as responsible, is not under restrictive controls. The budget forms the bases for departmental control of activities and so should cover all phases of departmental work.

It is not sufficient that the funds derived from the administration, and the expenditures for instruction be entered on the budget. All funds derived from any source should be entered. Examples would be service enterprises, student activities, and others. Often these are entered independently by their respective managers. Klein (82, Vol. I, p. 159) held that this latter procedure was a faulty financial method and did not allow for accurate budget making.

Stradley (106, p. 56) concluded that all income from the physical education department should be planned and controlled through the institutional budget. Although the latter reference is to one activity, it illustrates the general conviction that budgetary control should extend to all departmental activities.
Since industrial arts courses have no organic relationships with other courses, unless such a relationship might be existent between shopwork instruction and management courses, and because these courses consist of using expendable materials, they should be supported by a specific budget. When monies are placed in a general fund, then the teachers are placed in a position of subserviency and continuous supplication. The application of democratic administration would demand the designation of the industrial arts area as a functional unit of the fiscal organization, with a separate budget for instruction and supplies.

46. The execution of the departmental budget provides for emergency expenditures.

The derivation of this practice is contained within the writing presented in this report as practice number 44.

47. A faculty salary schedule with periodic increments is essential.

One of the most widely recognized principles of faculty building is that of a general pattern of salary procedures. Very few universities in the United States have adopted a fixed salary schedule, and the higher institutions have not achieved the significant results obtained by the lower schools in this matter. The National Education Association (103, p. 77) reported in 1951 that approximately 78 per cent of cities with a population of from 2500 to 5000 used salary schedules.
Almost universal acceptance of the desirability of a salary schedule seems to make any argument for a schedule needless. Nevertheless, it may be mentioned that a schedule tends to eliminate, according to Campbell (30, p. 233) "horse trading" in the employment of teachers. Also, a system of planned increments serves as an inducement to teachers, and the schedule furnishes the administrators with an instrument for planning long-term budgets.

Dr. John C. Almack (1, p. 19), Superintendent of Schools in Pennsylvania, suggested eight factors which should be given recognition in a salary schedule: (1) subsistence, (2) training, (3) experience, (4) improvement, (5) teaching load, (6) merit, (7) risk, and (8) support of dependents. Merit has always been difficult to reconcile and no school system has successfully solved this problem. In practice it will be noted, most schedules use no more than the first three of the factors mentioned.

Without doubt, salaries play an important part in relation to morale. No one seems to know, however, just how much of the teacher's high or low morale depends on salary and how much is dependent on other factors. It is known that in some school systems with high salaries, the morale of the teacher is low. It is known, too, that morale is high in some systems where the salary is relatively low. Melby (96, p. 115), in Administering Community Education, supported the theory that those teachers who
had a hand in deciding the salary schedule were happier, even without a high pay, than were those who were not offered such an opportunity.

The Christian College Survey (118, p. 187) declared that "a salary schedule so constructed (by the faculty) serves as a constant spur to members of the faculty to improve their efficiency." Eliot (51, p. 12) described at length "the general features of a good scale of salaries." Lindsay and Holland (89, p. 426) stated that "without reasonable doubt, teaching efficiency in higher institutions would be very materially increased by the adoption of a fixed or progressive salary specifying a certain amount for certain definitely defined services." Ward (7, p. 124) wrote, "There should be faculty participation or consultation in the development of salary scales."

48. The faculty participates in the formulation of the institutional salary scale.

The derivation of this practice is contained within the writing presented in this report as practice number 47.

49. Financial aid to students is distributed on the basis of personal need.

Hughes (72, p. 161) is among the few writers who places the need of a student foremost in the distribution of various forms of student aid. He concluded that scholarships should be awarded on the basis of need, regardless of
athletic or intellectual ability. In the light of Hughes' statement it should be stated that intellectual ability should not be overlooked. He felt that a person ranking highly and in need of financial support should receive such support before someone ranking slightly higher academically without financial needs.

In this day when industrial arts departments are receiving more and more funds for distribution to students, the time has arrived when a decision must be made as to whom the monies should go. Crawford (73, Vol. IV, p. 2) noted that certain schools gave more attention than others to the personal needs of the students as a basis for the distribution of financial aid, implying that this basis should be emphasized. Fraser (56, p. 34), in The College of the Future, wrote that need rather than ability or experience is mentioned most frequently as the basis for selecting students for financial aid.

At least it may be said that financial aid should be awarded to students without discrimination as to race or creed. This ideal grows out of the recognition of the fact that fair dealing is necessary in the work of those whose duty it is to develop fairness and honesty in students.

50. Budgetary provisions are made for the replacement of obsolete equipment.
The derivation of this practice is contained within the writing presented in this report as practice number 44.

51. Clear lines of demarcation exist between funds for instruction and those for supplies.

The derivation of this practice is contained within the writing presented in this report as practice number 45.

52. The department head controls the expenditure of departmental funds.

The derivation of this practice is contained within the writing presented in this report as practice number 44.

Physical Setting. The importance and significance of providing adequate, properly located, and properly serviced laboratory space becomes dominant when one considers the extent to which industrial arts has entered the school program. It cannot be denied that industrial arts came in through a basement window. Often the janitor was the part-time instructor. But when correctly oriented and properly presented the program soon moved to better and better physical plants. In planning new buildings or refurbishing old, the matter of providing shops, allied laboratories, and equipment must be given careful consideration.
There is a growing demand for education and skill. This demand will probably increase at an accelerated rate in both the near and long-range future. The past ten years have witnessed a greater change in industrial requirements than the previous fifty. Atomic energy and automation are but two of the new words introduced into the vocabulary by this revolutionary change. To keep abreast of the possibilities presented by these new challenges the existing industrial arts programs must be, in most cases, reoriented.

Institutions will require larger budgets to make the new programs operational. The equipment and teachers and their qualifications will depend largely upon the budget available. Modern equipment but unqualified instructors is as futile a combination as qualified instructors and antiquated techniques and machines. Some schools are attempting to obtain the objective of industrial arts, the interpreting of industry, with equipment and methods which have all but disappeared from the American industrial scene.

Educators must realign their thinking and work more closely with labor and management representatives in planning industrial arts programs. Too often they isolate themselves and lose contact with the community. Their shop programs suffer as a result. A closer association will enable them to keep abreast of the dynamic changes altering the industrial concepts.
Conferences with industrial leaders revealed that there are several factors to be considered in planning a program of industrial arts:

a. That industry is subject to rapid changes -- constantly producing new products with new materials and consequent new procedures.

b. That job opportunities are constantly diminishing for the unskilled and increasing for the technically trained worker.

c. That at best, we can predict only the general fields of interest and aptitude of the school youth in selecting a vocation.

d. That, even then, the force of chance and circumstance further complicate vocational predictions.

e. That with automation will come a higher standard of living and more leisure time.

Curriculum planning in the field of industrial arts, therefore, calls for facilities that would provide experience in the basic industries for both school age youth and out-of-school adults. Thus to fully serve the community the program has to be planned to provide opportunities for exploratory, specialized, and relearning experiences to pace the problem of all age groups.

Analysis of the various factors referred to, point to the desirability of a broad technical type of program on the college level with a general education approach and sufficient flexibility to meet the needs of the students in three groups (46, p. 80):

a. The industrial and business groups who need experiences typical of modern industry
as a preparation for apprenticeship in the various trades or to provide a background for business, technical, and industrial enterprise.

b. The academic or scientific groups who need some applied manipulative experiences as a background for some advanced technical studies in science, engineering, and design.

c. The general course groups who need some manipulative experiences in the basic industries for a general background or want to satisfy an interest in the crafts and a curiosity about how things are made and how they work.

The first task of the industrial arts instructor in planning a laboratory is to identify the educational outcomes of the industrial arts program proposed for a given community. The instructor can make a valuable contribution to the total institutional program with respect to the position of the industrial arts activities in the institution's traditions, its philosophy of education, and the type of educational services offered. He should be a member of the team which plans the institution's activities and its physical plant.

The selection and purchase of equipment for an industrial arts department should be carefully studied before final decisions are made. According to the Guide for the Housing and Layout of School Shops in California (28, p. 4), the selection of equipment should be determined first by consideration of safety. Then instructional efficiency, and industrial practices. There are a number
of good and reliable tool manufacturers ready to serve the industrial arts department's needs. Before purchasing a piece of equipment, it should be compared with other types and makes to ascertain that type or model purchased will suit the needs for which it is intended. Another factor to be taken into consideration is the service available in the community if a particular line of machinery is decided upon. It may be well to have a uniform line of machinery for this reason. Also it is necessary to inspect industrial facilities to see if they are still performing operations which call for the use of such a machine. The Delta Manufacturing Company (44, p. 36) made the point that "it is important that when students are given instruction on a machine that they find that same machine in the factories and industrial plants."

One manner of approaching the problem of purchasing equipment is to prepare an ideal list of equipment, and then modify it in light of limiting factors so as to meet local needs and budgets. Hasty purchases are to be avoided and only first quality tools should be considered. Cheap tools will not be cheap in the long run since such tools will not stand up under hard school usage. If first-quality tools are purchased, students can be taught to recognize and appreciate good equipment by using it.

Thus it can be seen that with the continued expansion of industrial arts programs, practically every
instructor of industrial arts will, at some time, be faced with the problem of planning or reorganizing a laboratory. Because of unlimited variation which will occur no hard and fast rules can be set and adhered to. Basic and most important is the educational program, which should be planned prior to actual laboratory construction.

54. There is sufficient laboratory equipment to accomplish program objectives.

The derivation of this practice is contained within the writing presented in this report as practice number 53.

55. Each laboratory meets industrial safety requirements.

Industry has long since accepted accident control in the factory as a major administrative function of management. The growing importance of safety as an instructional obligation of the schools is rapidly becoming a matter of general public interest. However, the administration of effective accident control in the school itself has lagged far behind that of industry. In most cases, it is probably true that within the institutional system the industrial arts department will most likely be fully cognizant of the importance of safety administration. This is the department one would expect to find most interested in accident control, because of its obvious safety hazards presented by the constant use of tools and machines.
by students. Notwithstanding the many injuries received on institutional stairways, playgrounds, and athletic fields, the public seems to be most aware of and sensitive to, accidents occurring in the laboratory. It is, therefore, of particular urgency that the instructor be concerned with and always alert to, the prevention of accidents in the laboratories.

Where there is an administrator with instructors under his authority, it is important that the function of each should be defined clearly and the respective responsibilities fully accepted by each. It seems obvious that for an administrator to preach safety to his staff without having a definite plan of procedure to be followed by them is to make safety merely an abstraction without specific meaning. It is essential that regulations be adopted and that they be rigidly enforced without exception. According to Dr. Arthur B. Mays (94, p. 116), Professor Emeritus, University of Illinois, in School Shop Administration:

Generalizations must be interpreted to instructors and students in terms of specific regulations concerning specific operations. These regulations should be reasonable and based upon expert authority or experience, or both, and they should be thoroughly explained to members of the staff and discussed by them.

It is not justifiable for an administrator to assume that every member of his staff is fully aware of the necessity for vigorous enforcement of all safety regulations,
or that they practice sound safety methods themselves. Since laboratory instructors with the best of intentions may misinterpret safety rules or unconsciously grow lax in the management of their classes, it is important for the administrator to make frequent checks on the enforcement of safety rules and on the effectiveness of safety devices.

It is the goal of every shop teacher to maintain an accident-free record. However, even under ideal conditions it is impossible to prevent an occasional mishap. Since the shop teacher is directly responsible for shop safety and keeping accidents at a minimum, instruction in the prevention of accidents should be thorough and continuous. Industrial safety requirements are necessary if the industrial arts shop teacher is to maintain a safe shop. According to the School Shop Planning Manual of the Walker-Turner Company (146, p. 6), "safety should be given first consideration in shop operation. Procedures should be the best of those found in industry." Becker (15, p. 69) outlined some of the superior industrial and school shop safety practices in a recent article in The Industrial Arts and Vocational Education Magazine:

Equip noisy shops with fire alarm gongs and certain shops with fire alarm sending stations. The proper number, type, and size of fire extinguishers should be provided in the correct locations. Shops using open flames should be equipped with safety blankets. Hazardous inflammable materials should be
safely stored, and explosion proof electrical fixtures located in such storage areas. In general all laboratories should meet industrial safety requirements for the specific activity.

56. Staff offices are in the immediate proximity of the laboratories.

The office area for one or more laboratories is an important division of the department. According to the shop planning standards of California (28, p. 4), "the shop instructor should have an office adjacent to the shop area." The primary reason for such a location seems to originate with the idea of control but has since come to be important because more and more institutions of higher learning are requiring the instructors to perform counseling duties on an individual student basis. This type of guidance work requires an area with a certain confidential atmosphere if the advisee is to show any trust in his advisor and benefit from the counseling given.

In many cases office space is provided which is widely separated from the laboratories thus imposing a hardship on instructors and students alike. Many times neither the laboratory nor the office is equipped with a telephone which adds to the inconvenience. Douglas O. Delano (43, p. 70), public school industrial arts instructor, supported the thought that to facilitate maximum use of all shop areas with a minimum of interference to the instructors, to make it easier for an instructor to work
in several shop areas and to keep office space free from the noise of the shops, offices should be provided which were separated from but adjacent to, the laboratories.

As Delano pointed out the instructor should have a place to study, grade examinations, prepare lessons, and the like away from the general confusion of, but near the laboratory. Warner (152, p. 1) supported this thinking:

The instructor should have some designated area which includes a desk, typewriter, filing cabinets, etc., preferably located away from noise and dirt but convenient to the reference and planning center, and commanding a full view of the laboratory if possible.

Other groups or individuals who supported this practice were Silvius (131, p. 201); William J. Becker (15, p. 66); Industrial Arts Supervisor for Israel; Mr. Eckhart Heid (66, p. 60), Industrial Arts Instructor, Public Schools, Dickinson, North Dakota; and the Ohio School Standards Commission (108, p. 10).

Planning for plant expansion in the field of industrial arts requires an investigation into two phases of school plant planning -- site planning and physical facilities planning. In the realm of site planning "the site area devoted to industrial arts should be large enough to provide for future expansion; it should be adjacent to or connected with the academic unit site (not isolated)," (28, p. 2) and "ample site area should be left undeveloped
where future additions might logically be built" (28, p. 3). Held (66, p. 66), Goldsmith (59, p. 66), Mr. J. H. Detrick (46, p. 81) Director, Vocational Education, Parma, Ohio, supported the two shop standards commissions quoted above.

In relation to the physical expansion of the industrial arts program it was the consensus of the writers that anticipation of the needs of the program will eliminate the necessity of continually reorganizing the shop facilities. Consequently, equipment should not be so integral with the building proper that changes cannot be made when the need arises.

Also planning should provide for a normal increase in population, and it would probably be well to construct and arrange shops in such a manner that enlarging and re-arranging can be accomplished with a minimum of construction and expense. Special attention should be given to large permanent equipment which cannot be moved easily. The same thinking applies to the service outlets and spacing of equipment.

Certain aspects of flexibility in school shop planning were brought up by the following:

Heid (66, p. 66) wrote:

Flexible power tools are of considerable interest at the present time for laboratory equipment. Wall partitions within a one-teacher shop area should be nonbearing and free as possible for movement to accommodate separate shops and even another teacher if such need arises.
Detrick (46, p. 81) wrote:

There should be flexibility of shop layouts for future rearrangements or expansion.

58. Storage space equals approximately 30 percent of the total space allocated.

With the large number of items which have to be purchased, stored, and consumed every year in the industrial arts laboratory, the problem of storage should be considered carefully when planning a laboratory. Items which are used daily and in considerable amount should be readily accessible, while those which are needed only occasionally should be stored more or less permanently. Unfortunately, there are no standards or even generally accepted practices found in all shop departments. The system of storage needs to be tailored to the teaching situation. Each instructor needs to determine the storage facilities for his type of laboratory. The material requirements for a modern education program have become so specialized and so extensive that the type and amount of storage space determines in a large measure, the type of organization and the method of teaching that can be carried on successfully. Most experienced teachers agree on one point, "there can be no possibility of having too much storage space" (131, p. 246).

In the Ohio High School Standards (108, p. 11) it was written that, "tool and supply centers should be conveniently located to reduce traffic interference to a
minimum." A similar statement appeared in the California Guide for the Housing and Layout of School Shops (28, p. 6), to the effect that the "supply room should be located conveniently for unloading from delivery trucks and for issuing supplies to students." Warner (152, p. 2) reported that "storage and supplies for all areas may well be concentrated in a single storage room for ease of administration and control."

There has been considerable discussion among the writers concerning the allocation of space for storage in the laboratory. Heid (66, p. 2) reported that the minimum storage area should be from 50 to 60 square feet in the average laboratory, or approximately 30 per cent of the total space allotted. This is in agreement with Warner's philosophy on storage space as he said:

Size of the laboratory shall be determined by the general rule of allowing a minimum floor area of 100 square feet per student. This figure included storage space, etc., such space being equal to approximately 30 per cent of the total space allocated. Due to the necessity of certain fixed items regardless of student capacity, the figure 100 square feet per student must be increased proportionately as the classes reduce in size.

Warner, it will be noticed, introduced another problem of laboratory planning, that of the number of square feet of work space per student. The writers are reasonably consistent on this point. This will be discussed under practice number 62.
Becker (16, p. 68) referred to storage as follows:

Storage space should be adequate in size, fit the shop flexibility pattern, be convenient in location, and economically provide specific space for the variety of specific storage problems. Night school storage should be considered.

Silvius (131, p. 245) wrote:

If possible, storage rooms should be connected or adjacent to, the main shop to eliminate the necessity of having the instructor leave a class unsupervised.

Mays (94, p. 13) felt that "every shop should, if possible, have its own supply room." Goldsmith (59, p. 66) and Detrick (46, p. 81) supported May's thinking.

There has not been much written concerning the exact amount of locker space that should be issued to each student but the consensus seems to be that the minimum should be one cubic foot as mentioned by Warner, Heid, and others.

Heid (66, p. 62), in a recent issue of Industrial Arts and Vocational Education, wrote:

Ideally there should be a locker of approximately one cubic foot capacity for personal possessions and another for shop projects.

Mr. Howard Ziefle (162, p. 74) Principal, Technical High School, Baltimore, Maryland, stated the size in another manner:

The locker room should be equipped with circular washbasins and 9 x 12 x 16 inch lockers.
Since there are no hard and fast rules concerning these practices, the procedure one can show is to study in detail the list of supplies used, the room space available, the funds provided, methods of purchase, whether in large or small quantities, the method of issuing supplies, and other important considerations, and then devise storage plans which seem most practical under existing conditions. When planning storage facilities it is important to bear in mind that quantity buying, in nearly all cases, is more economical than buying small amounts at frequent intervals. When planning for the storage of small items such as screws, there is an advantage in using containers which can be easily labeled and arranged in an accessible manner. It is a common practice in many shops to store small items in glass containers. Recently supply houses have been giving attention to this problem, and various specially designed cabinets are being manufactured to solve the school laboratory storage problem.

59. Storage space is readily accessible.

The derivation of this practice is contained within the writing presented in this report as practice number 58.

60. Provision is made for the display of student work.
One might say, "Shop project exhibits 'sell' the shop program," because exhibits are still one of the best methods of interpreting the industrial arts program to the school and community. According to Ralph Rogers (125, p. 1), Supervisor of Industrial Education, Los Angeles City School System, such exhibits serve school-community relations by:

a. Stimulating public interests in the industrial arts program.

b. Interpreting the industrial arts program to the public.

c. Recognizing the achievement and craftsmanship of students.

d. Recognizing the service and inspiration of industrial arts teachers.

e. Keeping the public informed of the work done in the industrial arts program.

The exhibits should be designed to serve specific purposes and appeal to the general public as well as parents and students.

In general the display of student work is centered in the institution proper and requires permanent display facilities as opposed to those needed for school-community exhibits which are often held in fairground buildings, churches, auditoriums, and the like.

The display cabinets or areas should be given careful consideration in shop planning. At least one display cabinet should be located in a corridor where all students
can see it. A lighted cabinet outside the shop entrance is desirable where conditions permit. This statement is supported by Warner (152, p. 7) who wrote:

Lighted exhibit and display cases are highly desirable and should occur both in the laboratory itself and in central locations, probably main corridors, in the principal part of the building.

Other writers who supported this statement were: J. Frank Faust, District Superintendent of Schools, Chambersburg, Pennsylvania (55, p. 70), Wilber (156, p. 258), and Heid (66, p. 50).

It is to be noted that none of the authors mentioned any type of mobile displays. This type of display would also help the institutions' public relations program.

61. Planning for physical plant development is included as a part of overall institutional planning.

The derivation of this practice is contained within the writing presented in this report as practice number 57.

62. There are between 100 and 200 percent more work stations provided than the maximum number of pupils using the laboratory at any one time.

The planning of space for physical facilities in the laboratory is always simpler than planning for the amount of space and the number of work stations to be allowed for each student. Machines tend to remain stationary, students do not. The number of operations necessary for a student
to complete a project often depends upon the student's ingenuity and desire concerning the quality of the finished product. Even on a small project the number of operations performed and the work stations utilized often runs into the hundreds. In a general shop where a student might operate a sample of every machine and tool within the institution, it is logical that more work stations and floor space would be necessary. Any time that there are as many as 20 students in a shop at one time, especially in a unit shop, experience has shown that a minimum ratio of work stations to students should be two to one, and preferably four to one. That is, "there should be between 100 percent and 200 percent more work stations provided that the maximum number of students using the laboratory at any one time" (152, p. 2).

The overall floor space per student is generally calculated as so many square feet per student. The general consensus is that there should be a minimum of 50 square feet per student at any time with amount up to three times that preferred.

William B. Itner (75, p. 50), a well-known school architect, wrote:

As to the number of square feet per student this varies from the established minimum of 50 square feet to more than double that amount. Other variations for size and shape will come with the number and size of machines and working opportunities.
The California Standards Commission (28, p. 3) arrived at the following conclusions:

a. Heavy shops (general, wood, metal, machine....)
   - minimum space: 75 square feet per student
   - adequate space: 100 square feet per student
   - desirable space: 125 square feet per student

b. Light shops (mechanical drawing, crafts....)
   - minimum space: 40 square feet per student
   - adequate space: 50 square feet per student
   - desirable space: 60 square feet per student

Mays (94, p. 10) felt that 50 square feet per student should always be regarded as the minimum and never the ideal. For classes of 20 or less they thought the minimum should not fall below 60 to 70 square feet per student.

Hans W. Schmidt (128, p. 52) late State Supervisor in Wisconsin, using the Mays data, found the median was 54 square feet per student in all woodworking shops in Wisconsin.

It can be seen that small crowded shops not only hinder good work, but they increase discipline problems and make effective safety practices very difficult.

63. Supply centers are centrally located.

The derivation of this practice is contained within the writing presented in this report as practice number 58.
General lighting is 100 foot candles at bench height.

Proper and adequate lighting is one of the most important considerations in laboratory planning. Well-diffused light which eliminates shadows on or near work surfaces may be considered proper lighting. Glare is a source of eye strain and must be eliminated also. Natural light let into the laboratory so as to avoid glare and inequalities in its intensity, is the most desirable illumination. A common error to be found in laboratories is a row of work-stations near the windows where there is annoying or blinding glare while the workstations on the opposite side of the laboratory are too dark. It is usually impossible to avoid such a condition unless properly arranged windows are provided in two walls of the shop, or artificial lighting is used to supplement the natural lighting. There is little danger of getting too much light, but serious danger of providing too small an amount of properly designed illumination.

Regardless of the type of lighting, laboratories should "never have less than 100 foot candles of illumination on work surfaces" (152, p. 7). To check this amount of light "every school should have a foot-candle meter" (94, p. 23).

Whenever a teacher or school official is in doubt with regard to the amount and quality of laboratory lighting
provided, an expert in illumination engineering should be consulted. School officials have a heavy responsibility in this matter, and far more thought should be given the proper planning of lighting than is usually the case.

The problem of adequate and effective lighting for the school shop has recently been made the basis for exhaustive study and experimentation. The results of these studies indicated that in only rare instances can sufficient daylight be provided in all parts of a room to furnish adequate illumination for many types of industrial arts work. It therefore becomes necessary to depend upon artificial lighting.

Goldsmith (59, p. 66) believed that "artificial light should be furnished by fluorescent units provided with glass or plastic guard shields and box diffusing grills and at least 35 foot candles of light should be available at bench height." Heid (66, p. 60), and Ziefle (162, p. 72) agreed with Goldsmith and in addition Ziefle mentioned that in areas where there was dust or combustible fumes the lighting fixtures should be explosion proof.

Wilber (156, p. 289) reported that his studies showed:

When considering the problem of adequate lighting, two factors are of importance: (1) the quantity (of number of foot candles) required and (2) the source or quality of illumination. Experimental studies have indicated that a minimum of 30 foot candles at bench height is desirable for all types
of industrial arts work. For such activities as graphic arts, textiles, and planning, the amount may well be increased to from 45 to 50 foot candles.

The lighting chart in the Walker Turner Company shop planning handbook (146, p. 11) shows that "overall ceiling lights should provide 50 foot candles at desk height. Localized lighting should provide 100 foot candles at indicated work surfaces."

Warner (152, p. 7) said:

Good general lighting shall be provided to an intensity of at least 50 foot candles at bench height in all areas and this shall be supplemented with additional local lighting to 100 foot candles on all machines and areas where precision work is carried on.

The California standards (28, p. 7) for school lighting tend to agree with Warner:

Artificial lighting for shops in general should yield 30 to 40 foot candles on the work. Lighting for mechanical drawing and other shops where precision work is carried on should yield 50 foot candles or more on the work.

65. Machines are color coded.

Color tints and shades have a definite effect on morale and efficiency. The same effects are noted in both industries and schools. Fatigue, eyestrain, and other hazards can be minimized by its proper use. Color may improve visibility and provide a restful surrounding. It should be used to identify fire equipment and safety equipment in the shops. Machines and equipment should be painted
in colors which will harmonize, yet set them off from the rest of the room. Operating controls may be painted in bright colors, such as yellow. The use of red should be reserved for safety lines, around machines, dangerous areas, and the electric switches on all machines. Contrasting or bright colors used on tool panels or on the inside of tool cabinets will tend to set them off from the rest of the shop. Freshly painted machines, walls, and floors in agreeable tones, create and promote an interest in and a desire for maintaining clean and orderly shops. A clean shop is important not only for the sake of appearance, but also to help prevent accidents.

Within recent years much has been printed concerning the use of color in the school shop. In places where a color scheme has been tried, a definite rise in morale, in safety, and in character of the product has been reported. Important recommendations for the use of color according to Wilber (156, p. 256):

- Paint machines and equipment a color which will harmonize with the walls.
- Paint operating controls a bright color, such as yellow.
- Reserve the use of red for danger.

Detrick (46, p. 81) summarized his findings on the use of color when he said, "The laboratory should have pleasing color dynamics."
Goldsmith (59, p. 66) reported the results of his studies as follows:

Shops should be painted in keeping with proved paint research -- color dynamics. Ceilings and walls above a seven foot dado should be white. All woodwork, lockers, tool cabinets, and the exposed walls below the dado should be painted a pastel green.

According to the Walker Turner tool company (146, p. 11), "coloring should be functional according to recommendations for restfulness and utilization of color for safety and identification." Warner (152, p. 12) added, "Machines should be color coded."

The California shop planning guide (28, p. 7) was very much in agreement with Goldsmith and Wilber when it showed:

Machinery and equipment should be painted in colors that will minimize eye fatigue and promote safety. The nonoperating part of the machine should be finished in receding shades (green, gray) to create a visual working area that minimizes eye fatigue. Operating machine parts should be finished in colors that are in strong contrast to the nonoperating machine body in order to separate the critical areas from the noncritical and to visually separate the critical machine parts from the material being worked upon.

66. Dust collection systems are convenient to all areas.

Dust collection has become one of the major problems in the school laboratory especially in older buildings. Small shops with inexpensive machinery often have more invested in the dust collection system than in the machines.
or there is no dust collection system because of the high cost of installation. In the latter case each machine is a potential health hazard and such a situation is to be avoided. Shops which are in existence, without dust collectors, may employ the overhead system or use individual dust bags for each machine. Both systems are not nearly as satisfactory as the under-floor method. However, this latter type of dust collection is available usually, only in new construction unless heavy expenditures are possible. Heid (66, p. 66) said concerning the floor dust collection system:

Dust collection ducts in the floor leading from machines such as saws, and jointers is a very desirable feature to install in new shops.

Warner (152, p. 8) stated, "dust and refuse collecting systems piped below the floor are to be considered highly desirable."

The Ohio Standards Commission (108, p. 12) and the California Standards Commission (28, p. 8) both thought that all dust, smoke, odors, fumes, vapors, and gases should be exhausted by mechanical means, preferably beneath the floor.

Wilber (156, p. 256) emphasized the use of individual collection systems for individual machines or where a general dust collection system was not practicable.

67. Each student has a minimum floor area of 100 square feet.
The derivation of this practice is contained within the writing presented in this report as practice number 62.

68. Each student is provided with at least one cubic foot of locker space.

The derivation of this practice is contained within the writing presented in this report as practice number 58.

Public and Professional Relations. The major element of institutional public relations at the beginning of the current century was probably the annual report. Ordinarily, it was not a device for members of the community to learn something of their institution of higher education. It was designed primarily as a report to the governing board, various educational leaders, and other interested persons on an upper level. There were certain relations with the press and public meetings on educational matters. However, these media were not used widely in a conscious and planned manner and were not thought of as public relations. Student organizations for leadership training were practically unknown, especially at the national or international level.

At present there is a growing interest in the field of school-relations. This interest has shown itself in a variety of ways. Probably the most important of these
has been the concept of participation in institutional affairs by the public. Campbell (30, p. 55) summarized this point: "The individual who develops understanding through participation in establishing a goal or in working to achieve it has a level of understanding different from that gained by reading papers, listening to the radio, or watching television." Participation requires mutual confidence between lay and professional people.

69. Supervision of departmental publicity is centralized with the department head.

If the publicity program is to cover completely and impartially the activities of the department, it is argued that a centralized publicity service is needed. For instance, in discussing athletics, Stradley (106) recommended that the various details of advertising the institution be collected in an office or bureau of publicity under a supervisor. Eliot (52, p. 130) gave as part of an answer to the question, "What is the function of the department head in reporting the activities of the department to the constituency?", "the inauguration of some effective agency to care for the publicity."

The general public has an interest and considerable investment in the schools of the land. It is impossible to think that the schools can exist apart from the community and community interests although this situation is apparent from time to time. If the school cannot exist in a vacuum, then it is necessary that there be a free interchange of facts and ideas between the school and community.

It is important that industrial arts receive as much favorable publicity as possible due to its usual high cost of operation per student. This publicity should be consistent, and in order to maintain such consistency it is necessary to centralize publicity releases.

Lepawsky (88, p. 567) in Administration, wrote:

So important are public relations for modern management that most administrators conduct publicity functions through staff specialists or agencies attached directly to them. Nothing can be of greater assistance to the long-run success of the administrator than smoothly conducted day-by-day relations with his clientele or public and a constant, frank sharing of information with the policy making body.

Melby (96, p. 248) reported that one of the most important tasks of the administrator was to centralize his publicity so that it could be evaluated, and keeping the professional staff and community informed as to the progress of the institutional program.

70. The catalog description of departmental offerings is accurate, brief, honest, clear, concise, and uses comparable terms.
The derivation of this practice is contained within the writing presented in this report as practice number 2.

71. The departmental staff utilizes lay advisory groups in planning the program.

It would be assumed that the lay people who participate with the department head and professional staff in the consideration of educational programs are themselves active in a variety of community organizations. It is assumed that these representatives will discuss the various problems with their organizational groups, so that in reality the amount of lay participation is much greater than that represented by the lay representatives working directly with the professional staff.

The American Association of School Administrators (3, p. 10) has summarized the place and function of lay advisory groups as follows:

The usefulness of lay advisory committees must be determined by the basis of whether or not they are a benefit to children. Have educational advantages of children been improved? Are the schools in the community operating on a sounder basis because of the work of the committee?

Reports from hundreds of citizens committees representing every part of the country indicate that these groups have been working with almost the whole gamut of problems facing America today. Many of the groups have been concerned with financing better schools, planning new school housing, and securing financial resources for the support and operation of schools. But these groups have been equally concerned with the educational program as it affects children.
directly. They have studied elementary and secondary education, methods of teaching, report cards, and vocational education. Some have advised on home and family life education, health education, and special services. Others have studied pupil transportation, continuing population trends, and adult education. The important thing is that they studied those problems which they felt needed attention in their own school or community.

While these reports are predominantly good, it should be pointed out that the lay advisory committee is not a panacea for all our educational ills. Constructive, widely spread, sincere lay participation in educational planning is one of the greatest hopes for educational progress in the schools of America.

In a recent survey of the needs of higher education in the state of Oregon, Anderson (9, 121) advised:

Create an advisory council to help improve teacher education practices in the State System, including the extension division, to act as an advisory committee to the instructions and the Chancellor on matters of teacher education, and to make recommendations to him regarding proposed curriculum changes involving allocations of function in teacher education in the State System.

72. The program has represented among its professional activities, an honorary fraternity in industrial arts education.

The first purpose of any leadership program should be to stimulate a widespread interest on the part of the teachers, administrators, and laymen in the constructive development of industrial arts education on the local, state, and national scene. Such an interest can be accomplished through a year-round program of several types of programs and not just an occasional, annual meeting where speeches are made to static audiences, after which
everyone goes home and nothing is heard or done until the next year.

The intrinsic nature of a leadership program for prospective industrial arts teachers should be to foster, develop, and evaluate industrial arts as general education. A leadership program must obviously assume an active, continuous role and not be sporadic in its activities.

The organizational detail of such a program should be kept as simple and as flexible as possible. Care must be taken lest faculty advisers assume too much initiative in planning and executing programing. Such actions mean that energy is consumed in maintaining a complicated and frequently ineffective machine. The challenge is, what important elements are concerned and actually accomplished in any one year.

The membership of the leadership program should be open to any professionally interested person. Great care must be taken, however, to insure the election of officers and committee members on the basis of real professional merit and their ability to produce results.

The challenge offered to industrial arts is great. Success of the industrial arts profession depends upon more broadly and thoroughly trained and educationally oriented teachers possessed of inspired, scholarly leadership. Weak, poorly-prepared teachers will progressively
have less and less success as the supply of well-prepared teachers increases.

These remarks are in agreement on this point with the philosophies of Warner (107), Wilber (156), Whitsel (155), Perry G. Rawland (116), Professor of Industrial Arts Education, State Teachers College, Saint Cloud, Minnesota, Dr. Louis J. Callan (29) Professor of Industrial Arts Education, New York State College for Teachers, Buffalo, Thwing (140), Silvius (131), and Dr. James Bryant Conant (64) United States High Commissioner to Germany.

A study of the literature of higher education was made in an effort to discover what seemed, in the light of the philosophy discussed, to be good practices for a departmental program of industrial arts. This was accomplished by deriving from the literature of higher education a list of proposed superior practices which was evaluated by a jury of nationally recognized leaders in the field of industrial arts education. Many informal discussions concerning the practices were held by the writer and various leaders in an effort to refine and clarify the statements of practice. The jurors replied with criticisms and suggestions for making the practices more valid. The judgment of the jury was then used to revise certain practices and to accept the remainder. The final statements may be considered criteria or standards. The statements of administrative practices
could serve as a basis for evaluating certain phases of administration in the industrial arts departments of the United States. The use of the list would enable industrial arts departments to see the professional strong points and weaknesses in their own program. Finally, they indicate departmental goals for which to strive.
Chapter V

CONSTRUCTION AND USE OF AN INQUIRY FORM

Determining the characteristics of a good program of industrial arts teacher education requires that consideration be given to such procedures as the following: the development of a preliminary list of practices, the selection of a professional jury, the submitting of the preliminary list of practices to the jury for criticism and suggestions, jury reactions, and the revised list of practices.

Development of a Preliminary List of Practices.

In developing practices for policies and standards of a good program of industrial arts one must first give careful consideration to what seem to be sound philosophical practices for industrial arts as an integral part of general education in the present day democratic and industrial society. This was done in the preceding chapter. The next step utilized in this study was to formulate a list of practices from the derivations in the preceding chapter. These practices were classified under the heads of program development, staff personnel, student personnel, finance, physical setting, and public relations.
Selection of a Jury. One of the most difficult tasks associated with this study was that of selecting a group of educators to judge the list of superior practices derived from the readings. It is evident that this task required experts familiar with educational administration. No two individuals think alike although certain groups seem to expound the same basic ideas. Therefore it appeared wise to select just members of different philosophies in so far as possible. Another apparent problem was that there is a very limited number of specialists in the field of industrial arts. Consequently in order to avoid dilution of expert opinion, the number of jury members was held to a minimum.

At the beginning it was obvious that only those men who had demonstrated their ability by making outstanding contributions to the industrial arts program should be selected. It was decided that 25 leaders serve as the jury along with the heads of all departments of industrial arts education in the state of California, who might or might not be leaders in a national sense.

Personal letters requesting assistance in judging the list of practices were mailed to 30 national leaders and nine state leaders. By increasing the number of national leaders initially to 30 it was felt that 25 returns would be a certainty. This estimate proved to be correct. The five persons unable to assist with the study gave excessive work in connection with their profession as the reason for refusal.
It was possible to use all 34 of the returns which was gratifying. It was felt that this return of 91 per cent was satisfactory and represented a fine portion of top authority within the field.

Submission of the List to the Jury. Lithographed copies of the list of proposed superior practices were mailed to all those who indicated a willingness to serve. The jury was instructed to judge the list as to their belief and not according to their current or past actions by: (1) placing a check mark to indicate their choice in either the (yes or no) column immediately preceding the statement of practice, (2) write in suggested changes in the "remarks" section, (3) delete any material seen fit, (4) add any statement of practice that they felt had been overlooked, (5) state their philosophy with respect to any of the ideas presented in the list.

As it was expected the jurors made many comments indicating different schools of thought. It was found that in general, however, the consensus of the leaders agreed with the statements of practice as derived from writings in the field.

Probably the most important issue noted pertained to cooperative effort by staff members in performing various staff functions. These included the development of objectives,
curriculum, plans, and the like. The majority of the group believed in cooperative effort however.

This example illustrates the wide sampling of opinion which was obtained from the jury. The task of tabulation and evaluation of the jurors' remarks may also be visualized.

Without question, the jury represented the culmination of expert opinion in the field of industrial arts teacher education. It is believed that the notable consensus of this group should be accepted and that the practices derived as a result of the jury's verification should be considered valid and of high value to the profession.

Treatment of the Data. There were 34 jurors who responded with usable lists. Since there were 72 practices, the jury submitted an aggregate of 2448 judgments. Many of the practices were supported with discussions which contained much thought for evaluation. No one juror commented on all practices and several made no comment whatsoever. Full agreement or disagreement on a practice was indicated by a check-mark in the "yes or no" columns preceding the statement of the practice. In the case where no other comment was evident, full agreement or disagreement was assumed.

A large worksheet was constructed to record the jurors' reactions. To make the worksheet more meaningful a system first used by Dr. Ralph O. Gallington, Head of the
Industrial arts Department, Southern Illinois University, was followed. Different colored lead-pencils were used to tabulate the different tones of comment. For example a red-lead pencil was used to record those comments which showed complete disagreement. The comments were recorded in abbreviated forms in an appropriate block. In this way all opposing comments were tabulated in a distinguishable way. Other colors were used to record the various tones of comment. For example green was reserved for those jurors who commented on their yes choices. In its final stage the chart revealed the tone of the jury toward the entire list of practices and presented their degree of acceptance. A study of this large worksheet provided the basis for findings presented in this chapter.

In addition to the worksheet, the list of practices was revised on separate sheets. As comments were recorded on the large worksheet, revisions if necessary, were tentatively made on the separate sheets.

Figure 1, page 208 and Table 1, page 209 show the reactions of the jurors to the list of practices in graphic and tabular form respectively. Of the total of 2448 responses, 2088, or 85 per cent, showed full agreement. This large "in agreement" percentage was expected because of the careful evaluation of the existing literature. Had this "in agreement" percentage been low, the entire study would
Figure 1
REACTION OF JURORS TO LIST OF PRACTICES

Yes
No
Did not answer
TABLE 1

SUMMARY OF FINDINGS, AND JURORS' REACTIONS TO
THE PROPOSED LIST OF PRACTICES

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have been a failure. It is obvious that the jury rated the list of practices highly. It was found that constructive suggestions appeared often throughout many of the respondent's check-sheets. These comments provided for efficient treatment of the data for purposes of refinement. (See Appendix E, Comments of Jurors.)

Weaknesses of the Study. It may be assumed that every study of this type has certain weaknesses. It is probable that one of the greatest weaknesses of a jury study is the tendency for jurors to overlook statements and not to give full consideration to words or meanings. When the jury
accepted the responsibility to assist in this study, several
made it known that a limited amount of time was set aside for
such tasks. It is doubtful, therefore, that in such instances
that the best of judgment was received. It is probable that
such a juror would gloss over certain of the statements, indi-
cating full approval or disapproval while he actually had
some comment to make which would add "tone" to his choice.

The fact that there were many comments from such
a distinguished group causes one to feel that this jury did
complete the check-sheets to the best of their ability. This
is not surprising in that the members of this jury have
always demonstrated a keen interest in such studies. More-
over some comments would indicate that the original state-
ments did have weak spots which were seen by experts.

List of Revised Practices. In this section
practices which were revised are listed. First, the original
practice is stated, followed by its revision.

5. (Original) The use of reference materials
for the industrial arts program
receives the same consideration
as tools.

(Revision) The use and selection of reference
materials for the industrial arts
program receives the same consider-
ation as tools.

6. (Original) The development of departmental
curricula is based on departmental
or professional aims.

(Revision) The development of departmental
curricula is based on departmental aims.

19. (Original) Actions affecting individual members of the department receive the collective consideration of the departmental staff.

(Revision) Actions affecting staff members, as a result of professional problems, receive the consideration of the department staff.

39. (Original) The administration of guidance consists of full knowledge of the characteristics and progress of the individual.

(Revision) The administration of guidance consists of as much knowledge as possible of the characteristics and progress of the individual.

53. (Original) All equipment is representative of industry.

(Revision) As much of the equipment as possible is representative of industry.

62. (Original) There are between 100 and 200 per cent more work stations provided than the maximum number of pupils using the laboratory at one time.

(Revision) There are between 100 and 200 per cent more work stations provided than the maximum number of students using the laboratory at one time.

65. (Original) Machines are color coded.

(Revision) School laboratories make use of color dynamics.

In Chapter III a study of the literature of higher education was made in an effort to derive a list of practices for the administration of industrial arts on the undergraduate
level. In Chapter V these derivations were utilized to prepare a list of proposed superior administrative practices. This list was criticized by a jury of selected leaders in the field of industrial arts teacher education. The final list was revised to agree with the jurors. Chapter VI will present the findings of the study.
Chapter VI

FINDINGS

One of the most necessary requisites for a successful enterprise is a skillful administrator. Technical knowledge and capital are needed also, but without competent executives no company can hold a position of leadership. These men must plan, direct, and control the operations of the business. What applies to industrial management tends to apply to the administration of industrial arts teacher education. To be sure, the specific activities of these various enterprises differ greatly. Yet in each there are problems of organizing, of selecting leaders, of formulating plans, of evaluating results, and of coordinating and controlling the activities to accomplish agreed-upon aims and objectives. These basic processes tend to be common to cooperative effort.

Program Development. It was found that the formulation of departmental aims and objectives was a group decision in so far as members of the various staffs were concerned. The jurors believed that although it was necessary to be definite concerning departmental aims and objectives, it was necessary also to provide a certain amount of
flexibility which would allow for revision to keep pace with expanding technology.

There were still a few department heads who felt that they should formulate department policy independently of their staff. However, the majority favored the development and approval of such policy as a staff operation. At the same time it was felt that the department head should represent the department to the public and be aware of and advise the staff of anything which might affect their morale.

There was almost unanimous agreement concerning the retention of a constant vigil on the revision of departmental objectives and curriculum. With respect to curriculum several jurors felt that there was no room for specialization in the field of general education. The literature showed that specialization was to be expected at the upper levels of the industrial arts program, especially in senior high school and in most phases of teacher education.

Comment concerning the subject of whether or not the improvement of instruction was based upon research showed that there was strong feeling among the department head that while this was the proper method, it was not being done to the fullest extent.

Remarks concerning extra-class activities indicated that there is still room for an outstanding definition
of the term. Several jurors could not arrive at a clear picture of what constituted such activities and consequently did not answer the question. In general most jurors agreed that supervision of extra-class activities was necessary because of the danger involved by the institution in sponsoring organizations which might damage the institution's reputation. They did not feel that supervision was a positive control, but rather an aid.

Alumni were regarded highly and most jurors thought the institution should maintain some educational program for their exclusive benefit. There were a few jurors, however, who felt this type of program was unrealistic for the individual school to operate and it would be better executed by the state.

It was the consensus that the departmental objectives should be compatible with those of the institution but departmental members should have some hand in the establishment of the institutional policy. The jurors also felt that some institutional administrations were hostile to the practical arts, making it difficult to formulate departmental objectives.

There was some difference of opinion regarding the education of teachers for a specific employment area although the majority of the jurors favored such a plan. The department heads as a group felt that the student should receive an education which would leave him with an open mind
and a solid core of basic knowledge which would make him ready for change. Also some jurors felt that the employment area in question might need modification and the introduction of new industrial arts concepts.

**Staff Personnel.** Although the majority of the jurors considered it essential for departmental administrative personnel to possess authority commensurate with their responsibility, many felt this was not true in practice. "My hands are tied with red tape," was a favorite expression of department heads when questioned concerning their ability to act independently of the institutional administration. On the other hand, several of the jurors felt that the delegation, by the department head, of even minor or routine administrative details was a mistake. They considered only the department head capable of performing such details as are common to the industrial arts department. They reasoned that the department head must be aware of even the most minute action or decision within the department in order to operate the department at peak efficiency.

Several jurors reported that they noticed in past experiences with assignment of administrative functions and their allocation that these were taken very often for granted. There was unanimous agreement that these should be defined clearly if any semblance of organization is to come to industrial arts teacher education in the near future.
Examples were cited where the industrial arts department was allocated to the fine arts division, to the applied arts division, and to the division of occupations, all in the same state. While the jurors were not saying this allocation was necessarily incorrect, they did question the point of such unorganized allocation within a so-called profession. Several jurors suggested the subject of allocation and the definition of administrative functions as subjects for national surveys. No such survey has ever been made.

Most jurors favored the exercise of executive powers of the department by the department head although there were several who favored group action based upon staff decisions. Most of the jurors felt such a procedure was too unwieldy for practical use although they did mention that decisions affecting the staff as a whole should be given collective consideration. They also recommended that actions affecting individual members of the staff, when such actions resulted from professional problems, should be given the collective consideration of the staff. They indicated further that personal matters affecting the individual staff members were not to receive such consideration. The solution of such problems should be left to the department head.

Jurors thought that the formulation of the departmental organization belonged to the departmental faculty. If the department head chose to operate the department with
standing committees, those committees and members thereof, should be rotated regularly. Some jurors did not agree with this plan and stated there was nothing sacred about rotation. Some of those agreeing to rotation thought the committee chairman should not be rotated as often as others.

In this section practices numbers 25 and 26 pertained to the selection of the department head by, first, the staff alone, and second, by the staff and administration, respectively. A few jurors thought the department head should be approved by the department staff alone, but the majority favored a combination of the staff and institutional administration. One department head who favored selection by the departmental staff alone, professed to not support such a practice because it conflicted with institutional thinking. In most cases this thinking was on the part of the president.

Almost all jurors agreed that the qualifications of department heads and staff members should include professional and specialized education in the field of industrial arts but were uncertain as to the amount of either or their proportions. Also they indicated that this action has not been true universally in the past. Several mentioned that "politics" often entered the scene when it came time to select a new department head or staff member.

The jurors were certain that staff members should be engaged in research and should publish their findings
although the consensus was that such action should not be done to the detriment of good teaching. Some jurors re­marked that those instructors with full teaching loads should be left alone to teach or that teaching should always come first. The department heads making these latter statements were from smaller schools with inadequate staffs and possibly beginning to feel the mounting pressure for research among the members of the profession.

It was felt also by the majority that the staff members should possess an extensive cultural background in order for the department to attain its objectives. Several of the jurors thought that industrial arts instructors as a group were low in culture and that such a condition should be remedied immediately.

Although the jurors favored written job specifications and standards of performance for staff members, they indicated such procedures were difficult to follow and that they would like to see more investigations concerning this point. The jurors favored tenure for probationary instructors when the college was assured that such staff members were satisfactory. Most jurors mentioned that further re­search was needed to ascertain the criteria for determining the suitability of a probationary staff member for tenure. Jurors did feel that the criteria for selection should contain such items as training, experience, teaching and re­search ability, personality, and character.
Promotional criteria received much comment but in general it was found that the successful performance of assigned duties, whether research or teaching, was the principal criterion. Most jurors did want the doctorate as a requisite for the rank of associate professor and higher. It was mentioned that contributions to the profession and scholarship should play an important role in determining who should be promoted.

**Student Personnel.** It was found that the jurors favored the requirement that students complete departmental personnel records at the time of their entrance. They also favored departmental retention of such records under the supervision of a staff member who would be responsible to the department head. There were those few who favored the retention of all student records by the registrar due to the much improved personnel data processing equipment now available. This latter comment was isolated in that it usually came from department heads in large schools which had extensive clerical personnel and equipment for maintaining student records. Those who did favor the records being retained by the registrar wished for some method of obtaining faster service from that division. This latter comment would lead one to believe that those few who favored the registrar's retention of student records were not completely satisfied with the system.
Student extra-class activities received considerable comment concerning how to allow the students spontaneity and self-direction and yet supervise their activities adequately. It was an opinion of the majority that whether or not there was any spontaneity on the part of the students, it was essential that supervision be in evidence. They did think that the supervision of extra-class activities should be rotated among staff members, with someone directly responsible to the head of the department. However, there were those few who felt that the department head should supervise all student activities.

The jurors desired that the students be evaluated during their college careers by means other than grades but most added the comment that they had never arrived at a satisfactory solution to the problem. Most felt that so far such a program was not practical. There were those who would sanction nothing other than the use of grades for evaluation. This group believed grades were the only objective system in existence for student evaluation.

It was found that the freshman-week program was valid but some jurors did not feel they were accomplishing their objectives. It was the consensus that this type of program should be focused upon the students' needs and desires and not so much on what the institutions wanted to disseminate. Several jurors thought the students should be questioned with regard to what they wanted to know and then
arrange to tell them. This latter procedure should take place in the high schools. Evidently the industrial arts departments of the land, as groups, are not doing as much as other departments in this respect since other leaders, such as those in science areas, are doing a great deal to provide students in high school with information concerning college science programs and other aspects of college life.

Although the guidance of students appears to be approaching a centralized system on many campuses, the jurors favored counseling on an individual student-instructor basis. They felt that each instructor should be given as much information as possible concerning the student and some staff member within the department should coordinate the counseling activities of all instructors. This latter person should be responsible to the department head for a sound counseling program. This counseling procedure should extend over the entire four years of the student's residence.

Several of the jurors believed that it was the responsibility of the student to return for follow-up interviews but the majority did not favor such action. They believed that the department should make definite provisions for such interviews and in addition the counseling should extend to all those who withdraw or fail to re-register.

Finance. Results showed that budgetary requests from the department staff should be assembled and approved
by the department head. In general the jurors approved this system because it gave them a sense of control which they would receive in no other manner. Some jurors did not approve of such a system as they felt the department head was not familiar enough with the equipment and supplies necessary to facilitate a program in the area for which the supplies were being requested. They also felt this budgetary control should encompass the activities of the entire department, especially student activities which often spend more money than authorized. The jurors were especially positive in their belief that the budget should include provisions for the replacement of obsolete equipment since many of them expressed difficulty in attaining their objectives with out-moded equipment. In this general area it was found that there was approval of a provision which would provide for emergency expenditures. Most of the jurors commented that too often they were authorized emergency expenditures as a policy measure on paper but in actuality it was almost impossible to obtain anything which was not requested in the periodic departmental budget.

The thought was expressed that funds in the budget for departmental activities should be controlled by the department head. Some jurors said this should be a staff function but the majority felt that the department head was qualified to decide on expenditures, any other system being too unwieldy. It was found, however, that the
jurors favored staff decisions on choices of expenditures from the budget which would affect the entire staff and department.

There was no doubt that the majority of the jurors favored clear lines of demarcation between funds for instruction and those for supplies. Several jurors mentioned that if this system was not followed the funds would be shifted back and forth continually until budget making would become impossible. Also an example was presented that illustrated a case where so much money was expended for supplies from a combination account that one of the instructors had to be transferred to another division in order to receive his pay. All matters of this type reflect upon the administrative ability of the department head and are to be avoided.

A faculty salary schedule with periodic increments was considered essential but a few jurors did not favor such a rigid system because they felt it did not encourage maximum productivity.

Results showed that while the majority of the jurors favored the basing of the distribution of financial aid to students on need, several thought that scholarship should take precedence over other factors.

**Physical Setting.** It was found that the jurors favored very highly the idea of planning for expansion of the industrial arts physical plant in the master planning of the
institution. Almost all felt that someone from the industrial arts faculty should be included on the institutional planning committee. They did not feel that either of the aforementioned factors were being accomplished to any great extent. They were especially disturbed by the number of new installations being constructed without provisions for expansion.

During the period when the planning is under way the jurors thought was the time to be certain that staff offices would be located in the immediate vicinity of the laboratories, that flexibility should be fashioned into the building, that storage and supply space should be planned for ready accessibility and central location, and provisions made for permanent-type student work-display areas. It was also felt that this was the correct time to plan for dust collection systems if such systems were to be included since the exhaust ducts should be beneath the floor. The ducts should be available to all shops, not just those which tend to become extremely dusty such as the woodshop.

As was presented in the derivation of administrative practices, storage space is one of the most critical problems facing the industrial arts instructor. Storage space determines to some extent the curriculum. On this point the jurors were quite clear. They wanted this space to equal approximately 30 per cent of the total amount
allocated. This amount should be considered adequate but not the acceptable maximum.

They voiced the same positive opinion with regard to student work space when they verified the necessity of 100 square feet per student. They concluded that the old standard of 50 square feet per student was no longer acceptable. In line with the number of square feet of floor space per student it was found that the jurors favored at least 100 to 200 per cent more work stations than the maximum number of students to use the laboratory at one time.

It was found that the jurors expected all equipment for use in the laboratories to be representative of industry. Several jurors did not feel it absolutely necessary to have such equipment for a general education program. With regard to the amount of laboratory equipment to purchase, the jurors agreed that there should be an amount sufficient to accomplish the objectives set forth by the department. Several jurors felt that this was an ideal and difficult to obtain. They also felt that many schools which claimed to be in possession of enough equipment to attain their objectives did not in reality have such equipment.

It was found that once the laboratory equipment has been purchased it should be placed and operated in a manner equaling or exceeding industrial safety requirements. There were several jurors, however, who thought that it was not
necessary for the average school laboratory to equal industrial safety standards.

Most of the jurors thought the school laboratories should employ the use of color dynamics on such things as walls and machines. A few jurors did not think it was necessary to employ this color system since industry did not practice it to any great extent. This latter comment revealed that some leaders are not overly familiar with industrial methods. It was felt by a few that this type of painting was too costly for the amount of benefit derived. Several jurors expressed the opinion that the painting job should be done professionally since they had seen several schools which had utilized color dynamics but had followed no accepted standard industrial system. Consequently the results were very poor. Two of the jurors mentioned that they had not, as yet, made up their minds regarding the use of color dynamics in school shops, thus they were unable to recommend this type of procedure.

Public and Professional Relations. The findings showed that the supervision of departmental publicity should be centralized with the department head. There were those who thought this function should be delegated to an assistant, or to some staff member who would serve as director of publicity. The jurors did think that the department head should approve all publicity releases.
The jurors were unanimous in their decision that the college catalog description of departmental offerings should be brief, concise, accurate, clear, and honest. Above all it should use comparable terms. Several jurors commented that while this situation should be true, close inspection of certain catalogs did not reflect such clarity and other criteria. Other jurors reported that catalogs they had observed recently were much in need of revision.

It was found with respect to the use of lay advisory groups that while the majority of the leaders favored such groups several of the more famous leaders did not. This minority group believed that this type of activity was of no real value to the industrial arts profession since those they had worked with recently had been a constant source of trouble. It was interesting to find that some college administrations did not permit the use of lay advisory groups. Those few jurors opposed to the use of lay advisory groups thought the use of professional advisory groups was alright. One juror did not feel that any laymen knew as much about industrial arts as the staff members, consequently, he did not approve of such personnel.

It was found that all jurors favored the inclusion of an honorary fraternity in industrial arts among the professional activities of the department. They recognized that this was a necessity for professional leadership training.
Chapter VI has presented the results of the study as depicted by the inquiry form. It was shown that the administration of an industrial arts teacher education program has become increasingly complex and difficult. The department head is still "boss" but the extent of his authority tends to rest somewhat upon the judgments of his subordinates since group decisions are necessary for democratic departmental operation. Chapter VII will project an administrative program for California institutions certified for industrial arts teacher education.
Part III

CONCLUSIONS AND APPLICATIONS

Chapter VII

PROJECTION OF A CALIFORNIA PROGRAM

The rapid growth of the west has placed unusually heavy demands on all levels of the educational structure. Building elementary and secondary schools has become the rule in nearly every community; record numbers of pre-school children await enrollment in kindergarten and first grade. School authorities are mobilizing all resources to assist in the development of sound and practical solutions to the mounting problem of numbers.

The institutions of higher education in California are well known. Perhaps less well known, but equally significant are the needs and trends which today face California's institutions of higher learning.

Historical Aspects. California institutions (27) with departments for industrial arts teacher preparation and the dates these departments were accredited by the California State Department of Education for credentialing purposes are: University of California, Santa Barbara College, January 1923; San Jose State College, April 1925;
Chico State College, October 1926; Fresno State College, June 1948; Pacific Union College, June 1951; Long Beach State College, June 1954; San Diego State College, June 1954; San Francisco State College, June 1954; Los Angeles State College, June 1955.

General Administration. The state colleges (27) of California by constitutional provision are part of the public school system of the state. Ten of the colleges are administered by the state director of education through the division of state colleges of teacher education of the state department of education, and by the state board of education. The eleventh college, the Maritime Academy, is controlled by its own board of governors and since it does not enroll students for industrial arts, it will not be mentioned again in this report.

In April 1947, the legislature, recognizing that the surge of population into California would make overwhelming demands on the existing facilities for higher education, passed "An act to provide for a comprehensive survey of publicly supported higher education in California, including the junior colleges, the state colleges, and the University of California, and making an appropriation therefor, declaring the urgency thereof, to take effect immediately." The survey was conducted by a committee under the chairmanship of George B. Strayer, and entitled either the Survey or the Strayer Report.
In accordance with recommendations made in this survey adopted by the state board of education, the several state colleges and the California Polytechnic College were grouped for administrative purposes into a single system under the Division of State Colleges and Teacher Education in the State Department of Education. In recognition of the fact that the State Colleges had for many years operated as regional colleges the survey further established geographical areas which stressed the regional responsibility of each state college, as well as the state wide responsibility of the California Polytechnic College. This concept of the state colleges as a group of institutions serving the higher education needs of the state in an organized, state-wide pattern has guided the development of college programs and policies, better than as single college units scattered about the state.

The 1949 legislature provided for the development of a local advisory board for each of the state colleges. These boards consisting of seven to 13 members, were appointed by the director of education upon recommendation of the individual college president. As the name implies the local advisory board is not an administrative unit, but rather one that works closely with the president in developing better college-community relations. The work of these boards within the several colleges has provided a
basis for more definite policies regarding the role which such boards may best perform.

The University of California was founded in 1868. It is administered by a single board of regents. The university consists of two coordinate institutions, one at Berkeley and the other in Los Angeles, Santa Barbara College, and a number of professional and technical schools.

California also has two large privately endowed universities, Stanford, and the University of Southern California at Los Angeles. Neither of the latter institutions offer degrees in industrial arts education.

Program Development. Programs of instruction (27) in the state colleges have been developed to meet student needs, and in their formulation the policies of the state board of education and the legislature must be carefully followed. While most curriculums are common to all colleges, each institution offers certain approved specialized curricula that serve the entire state and each maintains its own individual characteristic methods and emphasis in courses and curriculums. Each college offers courses especially designed to meet regional needs.

Majors leading to the bachelor's degree are offered by the state colleges in a variety of fields. Majors are of four types: liberal arts; occupational teaching credentials; limited two year programs. All
offerings are consistent with the purposes of the state colleges as enumerated earlier in this report and are subject to approval by the state board of education.

1. Purposes. The functions of the state colleges were defined by the legislature in 1947 as follows (27):

The primary function of the state college is the training of teachers. The state colleges may also offer courses appropriate for a general or liberal education and for responsible citizenship; offer vocational training in such fields as business, industry, public services, home making, and social service; and offer the pre-professional courses needed by students who plan to transfer to universities for advanced professional study. Courses in military science and tactics may be given in conformance with laws of the United States.

These functions apply to all state colleges. In addition, the Strayer Report recommended that Humbolt State College and Chico State College provide junior college service in their areas. Fresno State College offers two and three-year technical curriculums in agriculture.

Additional specifications, supplied by the legislature, charged the Los Angeles State College of Arts and Sciences with the responsibility of serving "the needs of the community and of the state," specifying that its function "includes primarily, but is not limited to, the training of the young people for gainful occupations in the arts and sciences as related to business and industry."

2. Research. Instruction is the sole purpose of the programs at all state colleges. Research is not a
recognized responsibility of the state colleges, this function being reserved for the University of California.

Since the basic function of the state colleges (except the Maritime Academy and California Polytechnic College) is the education of teachers. It is necessary that studies be continued to ascertain the needs for teachers in California, the interests of students in teacher education, and the procedures that are necessary to maintain a balanced supply and demand for teachers and teacher education.

Since California will need 13,000 elementary and secondary school teachers per year for the next five years, it appears that greater effort must be expended on the part of all institutions of higher learning to train a sufficient number of teachers to meet this great demand. This matter is the subject of committees within the state college system, with the hope that the state colleges may contribute their fair share of outstanding classroom teachers.

3. Curriculum Planning. The educational code (27) provides that the courses offered by the California state colleges shall have the approval of the state board of education. To carry out the broad functions allotted to them by law, the colleges must provide curriculums in two major fields: (1) professional curriculums for teachers, (2) curriculums in those other areas of instruction which are appropriate for general or liberal education, or occupational training. The scope of the responsibility of the colleges
demands that sound and effective criteria be established for maintaining existing programs as well as for adding new ones.

Probably the least known feature of the state colleges is their programs in the fields of occupational or vocational curriculums. The state colleges offer training which lies between the levels which can be supplied by the two-year programs of the junior colleges and the professional schools of the university. This so-called "in-between-role" has been the subject of careful study by representing state college committees operating over the past ten years. Criteria have been established which govern the programs in all areas of occupational curricula. The various programs of the California state colleges have been established to meet the needs of the youth and people of California for persons trained in their respective field of concentration. In order to develop a sound pattern of instruction, close liaison in curriculum planning is maintained with the junior colleges, on the one hand, and the University of California on the other. Such a process of coordination insures a sound program of services on the various vocational levels, as well as a guarantee to the people of the state that a balanced supply of well trained workers will be available in all fields of activity.
Staff Personnel. Staff members (27) of a state college are appointed by the Director in the State Board of Education (27) upon recommendation of the college president. Well trained and competent teachers provide leadership in the program and activity currently offered in the eleven institutions. For the 1957-58 school year, the colleges had the equivalent 2100 full time professional staff members and 1700 full time employees in positions envolving clerical and maintenance work. Faculty members compare well with those of other institutions of higher learning in terms of background and experience. In 1957-58, 54 per cent of the 2100 full-time faculty members held the doctorate, and 36 per cent had completed 60 or more graduate semester units but do not hold the doctorate. The remaining staff members had the masters degree or equivalent training.

Such a challenge demands coordinated and co-operative action of all colleges and universities commencing now and continuing for the next twelve years. Of particular interest to the state board of education and to the schools and people of the state is the role which the state colleges are fulfilling in the state's growing needs for higher education. This role may be defined by reviewing the purposes of the state colleges.

Student Personnel. Colleges and universities of California (27) enrolled a total of 144,426 full-time
students in October 1957. These were divided as follows: the University of California 33,326, State Colleges 25,162, private colleges and universities 32,499, public junior colleges 70,000, and private junior colleges 830. The state department of finance reports that California can expect some 255 public high school graduates in 1965-66 for every 100 graduates in 1957. Also there will be 215 students enrolled in the publicly supported colleges and universities of California in 1965-66 for every 100 enrolled today. Upon the basis of this information it is estimated that the University of California in 1965 will enroll 76,000, the state colleges 62,000 and the junior colleges 95,000. Since present enrollments of the private colleges and universities are approximately equal that of the University of California, for all practical purposes it may be assumed that by 1965 private colleges and universities may enroll more than 75,000 full-time students.

1. Enrollment Limitations. The 1947-48 survey of higher education (27) established recommended capacities for the long term developments of the various state colleges. The recommended maximum enrollments ranged from 1666 at Humbolt State College to 6000 at San Jose State College. Owing to the sharp increase in enrollments during the past six years, San Jose state college has almost doubled its recommended maximum. With the unprecedented growth of the
elementary and secondary schools, the outlook is for all colleges to attain the recommended maximum enrollments within the next year. It is thus necessary that immediate consideration be given to the problem of adjusting the existing policy for enrollment limitations.

Several questions are proposed by a study of the present enrollment policy. In response to the growing demand of students for the opportunity of a state college education additional facilities must be provided in state colleges or other institutions of higher learning. Otherwise, large numbers of California youth will be denied the right to attend college. This matter is probably the most important single item which affects educational planning. If California is to maintain its state colleges on a limited enrollment basis, then more state colleges or other state facilities must be provided. In a state which has traditionally demanded a high standard of education for its young people, the problem must be solved so that no deserving person will be denied the right to attend college.

2. Student Activities. Student activities (27) are a significant part of the entire program of the college. Every attempt is made to provide a balanced program of activities, related in so far as possible to the regular instruction program of the college. The objective of each college is to have all students to participate in one or
more activities as part of their college experience. Athletics are considered part of the program of instruction of the colleges. Maintained by the student body association, athletic teams have demonstrated that athletics can be an effective supplement to the college program. Music, drama, forensics, agriculture, and other fields have likewise provided students with opportunities to work with and before community and regional groups, and to contribute to the general cultural betterment of the communities in which the several colleges are located (26).

Finance. State college staff members (27) are subject to the same general rules and regulations that apply to all other state employees. Salaries are based upon schedules which have been adopted through cooperation of the state department of finance, the state personnel board, and the state department of education. Professional staff members are not represented on these boards. There are state funds for scholarship students.

Physical Setting. California (27) is the second largest state in the union, has a medial length of approximately 780 miles and a width of 150 to 350 miles. Both the topography and the climate are characterized by variety, contrast, and extremes.

A large part of the state has only two real seasons---wet and dry. This factor, coupled with the
relative short mild winters and agreeable summers, has had a profound affect upon the life, habits, and basic economy of the people. Its influence is seen in Californian architecture, clothes, amusements, culture, agriculture, industries, transportation, schools, and innumerable other fields.

The institutions for industrial arts teacher education are located at advantageous points throughout the state. Most are characterized by exceptionally fine physical plants employing reasonably modern systems. This is not true in all cases, however. Plans are underway to modernize all existing structures where such procedures are needed as well as the construction of many new plants.

Each industrial arts department is housed in a building or series of buildings separated from those of a strictly academic nature. Ordinarily the architecture is early Californian (Spanish) which lends a pleasing atmosphere to the entire program.

Public and Professional Relations. The 1953 legislature enacted a law permitting a local unit of government to contract with a state college for consultative and advisory services (27). This legislation was enacted primarily to enable small counties to draw upon the state colleges for services of personnel and fields for which the individual county could not provide otherwise.
It is contemplated that through such contractual arrangements the services of various state colleges will be brought to local school districts and county units. Services performed by state college staff members under such a contract are considered part of the staff member's regular service for which he is reimbursed by the state.

State college staff members in regions of the state are participating in many activities of the community and regional value. State colleges likewise share the work of various state-wide committees extending beyond the field of education. Thus bringing to such groups the benefit of broad training and experience.

While the state colleges are not research institutions, many books and magazine articles appear each year under authorship of state college faculty members. Service upon community and regional commissions and state committees and fulfillment of leadership roles in recognized organizations of both professional and lay nature are further evidences of state college services to the people of the state.

1. **In-Service Education.** Since the California state colleges have as their primary function the education of teachers, it is imperative that this function include the in-service education of teachers and school-administrators. Every state college offers diversified opportunities for
educational personnel to continue study to increase competencies through extended day programs and extension courses conducted throughout the school year and through the various courses offered during the summer session.

The popularity of the in-service program is enhanced by the fact that the colleges work closely with county superintendents of schools and local school districts on workshops and institute program, on cooperative studies, and provide consultative services to various projects of importance to the public schools.

Recently the in-service educational programs of several state colleges have been broadened to include comparable programs in the fields of business and industry. These services are consistent with the broad purposes of the state colleges.

The growing enrollments in the California state colleges have resulted in comparable increases in the number of students graduating from the institutions. Degrees of bachelor of arts and bachelor of science and master of arts, with the teaching credential are offered by the state colleges.

Lower School Education. The public school system of California (27) is under the direction of State Department of Education. Enrollment as of March 31, 1953 included 1,351,501 elementary pupils exclusive of 183,552 kindergarten
and 22,034 special students; and 404,931 secondary students, not including 327,790 special students. Expenditures for all sources for public education in 1951-52 included 507,311,228 for current operations.

There are 51 public junior colleges with nearly 70,000 regular students.

Conclusions and Recommendations. The people of California are demanding and obtaining more and more facilities for higher education. The tremendous rise, a sevenfold increase, in the numbers attending state schools may be seen in Table 2. The enrollments of the various state schools accredited for industrial arts and Santa Barbara College, are presented in Table 3. Table 4 reports the number of industrial arts teacher graduates of these schools. Table 5 presents the number of instructors at these schools. It is estimated by Dr. Robert Woodward, Industrial Arts Consultant for California (159), that the need for industrial arts graduates in the State of California will be 800 per year for the next five years. This need is for the public schools only and does not take into consideration the need of the institutions of higher learning.

It is known that California has a reasonably well balanced program of higher education with the exception of the dual system of administration of the State Colleges and the University of California. It will be recalled that the
Excerpt from report of Joel A. Burkman, Assistant Chief, Division of State Colleges and Teacher Education, "Regular Session Equivalent Full-time Student Enrollment, Exclusive of Extension, in California State Colleges, Actual and Estimated by Year, 1930 through 1958." Sacramento: State Department of Education, 1958, 1.

colleges are administered by the Division of State Colleges and Teacher Education, State Department of Education, but the University of California has a separate board of regents. This
TABLE 3
FULL-TIME UNDERGRADUATE ENROLLMENTS IN STATE COLLEGES CERTIFIED FOR INDUSTRIAL ARTS IN THE FALL OF 1957*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chico</td>
<td>1731</td>
</tr>
<tr>
<td>Fresno</td>
<td>4044</td>
</tr>
<tr>
<td>Long Beach</td>
<td>1950</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>3001</td>
</tr>
<tr>
<td>San Diego</td>
<td>5087</td>
</tr>
<tr>
<td>San Francisco</td>
<td>5169</td>
</tr>
<tr>
<td>San Jose</td>
<td>9160</td>
</tr>
</tbody>
</table>


situation means that the small, single industrial arts department of Santa Barbara College, receives the undivided consideration of one board which allows the college almost complete freedom in methods of operation. The other seven state controlled institutions certified for industrial arts are required to operate without deviation from the state plan. This is an unbalanced system. For example, Table 5 shows that San Jose State College has a staff of 18 full and three part-time members while Chico State College has a staff of four full and one part-time members. In numbers of major students these figures mean that San Jose State College has approximately 360 while Chico State College has only 80.
### TABLE 4
GRADUATES AND ESTIMATED GRADUATES OF CERTIFIED INDUSTRIAL ARTS EDUCATION DEPARTMENTS IN CALIFORNIA 1955-1960*

<table>
<thead>
<tr>
<th>College</th>
<th>55</th>
<th>56</th>
<th>57</th>
<th>58</th>
<th>59</th>
<th>60</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chico</td>
<td>18</td>
<td>20</td>
<td>33</td>
<td>38</td>
<td>44</td>
<td>52</td>
<td>195</td>
</tr>
<tr>
<td>Fresno</td>
<td>19</td>
<td>22</td>
<td>40</td>
<td>38</td>
<td>90</td>
<td>120</td>
<td>329</td>
</tr>
<tr>
<td>Long Beach</td>
<td>10</td>
<td>30</td>
<td>53</td>
<td>48</td>
<td>70</td>
<td>70</td>
<td>281</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>10</td>
<td>13</td>
<td>27</td>
<td>25</td>
<td>70</td>
<td>80</td>
<td>225</td>
</tr>
<tr>
<td>Pacific Union</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>San Diego</td>
<td>26</td>
<td>32</td>
<td>25</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>193</td>
</tr>
<tr>
<td>San Francisco</td>
<td>10</td>
<td>16</td>
<td>10</td>
<td>27</td>
<td>39</td>
<td>40</td>
<td>142</td>
</tr>
<tr>
<td>San Jose</td>
<td>20</td>
<td>32</td>
<td>50</td>
<td>40</td>
<td>65</td>
<td>85</td>
<td>292</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>50</td>
<td>58</td>
<td>20</td>
<td>40</td>
<td>85</td>
<td>95</td>
<td>348</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
<td><strong>223</strong></td>
<td><strong>263</strong></td>
<td><strong>296</strong></td>
<td><strong>508</strong></td>
<td><strong>592</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>2035</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The administrative problems are considerably different, although they must be solved, as mentioned previously, by the same stereotyped methods. To illustrate this point, San Jose State College will, in the fall of 1960 increase the staff to 36 members who will administer a program for approximately 700 industrial arts majors and 200 or more minors and service
### TABLE 5
FULL--AND PART-TIME STAFF MEMBERS IN ACCREDITED INDUSTRIAL ARTS DEPARTMENTS IN CALIFORNIA IN 1957*

<table>
<thead>
<tr>
<th>COLLEGE</th>
<th>Full-time</th>
<th>Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chico</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Fresno</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Long Beach</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Pacific Union</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>San Diego</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>San Francisco</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>San Jose</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

*Information gained from personal reports of department heads, 1957.

students. It can be seen that something must be done to overcome this imbalance between the large and small state colleges, and the University of California.

The following recommendations and conclusions were determined after careful consideration of the data presented in this study.

1. The state colleges should be allowed to have their own board of regents similar to that of the University of California.
This is necessary if the larger state colleges are to serve adequately the needs of the public. The thirteen state colleges should receive the same administrative benefits as does the single state university.

2. Each of the state colleges should be allowed to determine its own internal administrative system.

Presently each state college, regardless of size, is administered in the same manner. This is not in keeping with the principles of good administration.

3. The departmental executive personnel should be given authority commensurate with their responsibility.

It is recognized that it is impossible for an executive to administer a program without the authority to perform a thorough job.

4. The various departmental administrative functions and allocations should be defined more clearly.

Results of the study showed that many departmental functions were not defined clearly and the administrative allocation of industrial arts teacher education departments did not follow any particular pattern.

5. The departmental offerings shown in college catalogs should be revised to reflect more accurately the actual content of courses.

A comparison of departmental offerings and what was actually taught often left much to be desired. Descriptions of offerings should be reviewed periodically.
6. The staff load should be adjusted to compensate for time spent on research if such activity is to play a role in promotion.

State college promotion policy shows a weight given to research. No school time is provided for such activity. Consequently time for such research must be allowed.

7. Promotional criteria should include the primary criterion of successful performance of duties. Present promotional policy is not clear on the weight given to the successful performance of duties, whether teaching, research, or administrative.

8. Storage and supply facilities must be increased in existing physical plants and planned for more carefully in new structures.

Storage and supply facilities are very inadequate in most institutions at the present and there is some evidence that this situation might not be remedied in the planning of new buildings.

9. Departmental staff members should choose their department head and new staff members. This should be done by secret ballot.

Staff members apparently seem better satisfied when they have a hand in selecting their department head and colleagues. The use of the secret ballot tends to prevent any undue pressure being asserted by staff members.
10. Departmental committee membership should be rotated regularly.

Evidence showed that committee membership tended to become permanent in nature and that this was an inferior method of committee composition.

11. No staff member should be employed unless his background includes professional and specialized training in the field of industrial arts at least equal to what is required of departmental graduates.

Interviews showed that some department heads had employed personnel who did not possess a degree in industrial arts education. This fact later lead to certain difficulties in departmental assignments.

12. Freshman-week programs should be coordinated with departmental recruitment practices.

It was thought that much of the freshman-week orientation and resulting confusion could be eliminated by incorporating certain features of the orientation program in the yearly recruitment program which is carried on throughout the state.

13. The departmental faculty should be consulted with regard to college salary schedules.

Staff members seemed to feel more satisfied with salaries which they considered inadequate if they were allowed a voice in determining them.
14. Staff loads should be brought into line with those of the academicians.

Lecturing by industrial arts education staff members has increased to the extent that their class load is no longer realistic in comparison with loads of professors performing the usual type of academic lecturing.

15. Budgetary provision should be made for the replacement of worn out and obsolete equipment.

Many schools are required to utilize obsolete and worn out equipment due to a policy which does not provide for the replacement of such equipment. This in turn causes the presentation of an ineffective program.

16. There must be sufficient equipment, representative of industry, to accomplish the program objectives.

Obsolete equipment was mentioned in the preceding statement. Obsolete equipment in most cases is not representative of industry.

Also "it is impossible to work in a vacuum," as so aptly stated by Dr. Heber A. Sotzin, Head, Industrial Arts Department, San Jose State College.

17. Industrial arts honorary fraternity activity should be increased.

One of the methods of training for leadership, a facet which seems to be lacking to some extent in industrial
arts education, is through the honorary fraternity movement. More action is necessary.

Chapter VII has presented facts to show the seriousness of the problems which face California in the next seven years in planning for higher education. Unprecedented growth in student enrollment will shortly bring to the college level vast enrollment of students who are now progressing through the elementary schools. In order that the colleges and universities may be prepared for this tremendous demand of youth upon the facilities, it is imperative that local forces be united in the development of a sound program of instruction and overall planning.

This planning is especially important on the state level since the state colleges and the University depend largely, and the junior colleges partially, upon state-wide financing for their operation. Planning should be coordinated on a state level, probably through the State Department of Education under the leadership of the Director of Education. Planning should involve the best educational leadership and the equally important cooperation of leaders in all state-wide business, industrial, civic, fraternal, and public-service organizations.

The planning process should be continuous and, as problems are defined, competent consultants should be obtained who can assist in formulation of specific plans of
action toward solutions. When conclusions are reached and programs are outlined, the specific plan of action should be given wide publicity so that the people of the state may be informed. These plans should serve as a basis upon which legislation is drawn and enacted into law. Without such planning, there can be no realistic solution to the problems of growth which face higher education.
Chapter VIII

IMPLICATIONS AND FURTHER STUDIES

This study, it will be recalled, was not a fact finding survey to evaluate institutions of higher education. Consequently, it is necessary to determine implications and those problems which need further study from remarks made on the inquiry form, or during interviews, or by personal knowledge of the industrial arts teacher education situation. These implications and studies are thought to be on the local, state, or national level, and is some cases on more than one.

Almost all of the material presented in this study has significance for teacher education. After reading the study, however, it is apparent that many of the practices set forth are common to several facets of higher educational administration. In so far as possible the implications and future studies mentioned in this chapter pertain to industrial arts teacher education.

Local Level. The following are presented:

1. Re-evaluation of departmental aims and objectives

2. Evaluation of the department utilizing the resultant list of superior practices
3. Re-evaluation of college catalog descriptions of departmental course offerings
4. Follow-up studies of graduates and counseling procedures
5. Determination of library holdings for evaluation
6. Re-evaluation of curricula
7. Coordination of staff research
8. Alumni education programs
9. Correlation of staff administrative authority
10. Student and staff personnel records
11. Utilization of lay advisory groups
12. Departmental publicity, exhibits, and the like

State Level. The following are presented:
1. Allocation of administrative functions
2. Industrial arts professional organizations
3. Student professional leadership programs
4. Comparative analysis of physical settings
5. Utilization of lay advisory groups
6. Girls in industrial arts programs
7. State interpretation bulletin for industrial arts

National Level. The following are presented:
1. Methods of selecting departmental personnel
2. Promotional practices
3. Allocation of administrative functions
4. Tenure practices
5. Professional and specialized training of staff members
6. Budgetary activity
7. Student financial aid
8. Use of lay and/or professional advisory groups
9. Methods of departmental publicity
10. Activity of national honorary fraternities
11. Basic philosophy of industrial arts
12. Extent to which staff members are expected to perform research
13. Teaching load
14. Personality and cultural background of industrial arts teachers as compared with other area instructors
15. Size of staff for effective industrial arts teacher education programs
16. Use of ladies on the staff
17. Procurement of private industrial funds for research
18. Amount that curriculum change is based upon research
19. Cases studies of outstanding departments with respect to administrative activity

Chapter VII has presented implications to the effect that:

There will be a much larger college age population to be served in the future which will necessitate perhaps a re-evaluation of departmental aims and objectives.

Highly skilled and technically trained citizens are in great demand due to the complexity of a technological society. Consequently, the citizens will demand college education of a type consistent with the needs of the time.

Human resources must be cultivated, therefore, the requirements of the democracy demands higher educational programs.

There must be a meeting-of-the-minds on a common philosophy of industrial arts at the various levels. The public must be shown the differentiation between industrial arts and industrial vocational education.

It can be seen that the list of implications is endless.

Chapter VIII has presented facts to show the seriousness of the problems which California faces in the next seven years in planning for higher education. Unprecedented growth in student enrollment will shortly bring to the college level vast numbers of students who
are now progressing through the elementary schools. In order that the colleges and universities may be prepared for this tremendous demand of youth upon the facilities, it is imperative that local forces be united in the development of a sound program of instruction and over-all planning.

This planning is especially important on the state level since the state colleges and the University depend largely, and the junior colleges partially, upon statewide financing for their operation. Planning should be coordinated on a state level, probably through the state Department of Education under the leadership of the Director of Education. Planning should involve the best educational leadership and the equally important cooperation of leaders in all state-wide business, industrial, civic, fraternal, and public-service organizations.

The planning process should be continuous and, as problems are defined, competent consultants should be obtained who can assist in formulation of specific plans of action toward solution. When conclusions are reached and programs are outlined, the specific plans of action should be given wide publicity so that the people of the state may be informed. These plans should serve as a basis upon which legislation is drawn and enacted into law. Without such planning, there can be no realistic solution to the problems of growth which face higher education.
Chapter IX

SUMMARY AND CONCLUSIONS

This dissertation has been concerned with the derivation and verification of superior practices in the administration of industrial arts teacher education in the colleges and universities of the United States.

Chapter I outlined the scope, need for, and limits of the problem. Definitions were cited, and methods and techniques discussed.

Chapter II reported the background of the problem and showed that educational administration had its origin in the colleges and universities of Europe, especially in Germany. The evidence presented illustrates the growth of industrial arts from its inception to its highest attainment in the area of leadership.

Chapter III presented the nature of industrial arts. The doctrine, missions, curriculum, and bases of the program were discussed.

Chapter IV recorded the attempt to derive the list of superior practices of administration, utilizing as a basis, statements extracted from the literature of higher education.
Chapter V reported the method of jury selection. The attempt was made to select jury members of different philosophies in so far as possible. It was realized that there was a limited number of specialists in the field of industrial arts. Consequently, in order to avoid dilution of expert opinion, the number of jury members was held to a minimum. After the inquiry form had been constructed, sent, received, and analyzed, certain practices were revised.

Chapter VI reported the findings of the dissertation.

Chapter VII presented a projection of a California State Program of administration which included historical and other aspects of the California system for industrial arts teacher education. This included the scope, trends, and needs of the California system.

Chapter VIII reported the implications and further studies.

The first part of this dissertation delineated and presented the problem. The second part outlined the nature of industrial arts and the derivation of superior administrative practices. It was shown how the inquiry form was constructed, used, and analyzed. The findings were disclosed. In the third part the applications and conclusions were presented.
Considerable interest in the improvement of teacher education in the United States has been shown since before World War II. There have been numerous studies performed to derive curriculum content, source material, to ascertain the status of industrial arts teacher education and the like. This study was a departure from the usual study in that it was an attempt to obtain the attitudes of leaders in the field of industrial arts on matters of administration deemed superior by writers in the field of higher education.

The literature reflected that higher education has not established a full set of standards for the administration of higher education especially within the relatively new field of industrial arts. The literature did reveal that higher education desires to determine the nature of superior practices but that little has been done to satisfy the desire.

The conclusions reached supported the postulate presented in Chapter I than an investigation of leaders' attitudes is necessary for the solution of educational matters, and that:

1. Confusion in the contemporary administration of industrial arts education can be traced partially to conflicts in the thinking which concerns specific administrative acts of the departments.
2. There exists, in spite of the confusion and conflict in American teacher education, a tendency toward a consistent type of viewpoint among theorists and administrators who contribute to the literature.

3. The demonstration that by an application of scientific procedures, the elements of this integrated philosophy could be constructed from the writings of accredited leaders in the field of higher education.

A review of the recent literature in the field of higher education revealed that this particular phase of teacher education has many of the same problems and issues as other phases of higher education.

Program Development. Conclusions were:

The formulation of departmental aims, objectives, policies, and curriculum is a group procedure which must undergo constant surveillance for possible revision.

The departmental aims, objectives, policies, and curriculum must remain flexible, and the philosophy concerning these points must be compatible with the thinking of the institutional administration.

Department heads must be responsible for the morale of the departments.

The industrial arts program must satisfy student needs for specialization and orientation.
Research is essential to the improvement of instruction but the execution of that improvement rests primarily with the individual instructors.

Departments must establish programs to assist their alumni to attain further education.

The department must meet the needs of the employment area into which the graduates are sent.

**Staff Personnel.** Conclusions were:

Departmental administrative personnel must have authority commensurate with their responsibility, but the representation of the department rests with the department head as does the exercise of executive power. Departmental executives may delegate routine matters but responsibility cannot be delegated.

Organization of the department rests with the departmental staff but the selection of the department head and new staff members rests upon the combined efforts of the departmental staff and the institutional administration. If the department head chooses to operate the department by the use of committees, then the members thereof must be rotated regularly.

Administrative functions and their allocation must be defined clearly as must be the qualifications of the department head or staff members for the positions which they seek. Job specifications and standards of attainment must be utilized when hiring and promoting. Promotions
should be based upon successful performance of duties, and probationary appointments should be followed by tenure if the administration is satisfied with the instructor in question.

**Student Personnel.** Conclusions were:

Statistical studies of students' records must be readily available to the departmental staff for use in coordinating student activities.

Extra-class activities must be supervised but at the same time allowing the students a high degree of spontaneity and self-direction.

Evaluation of students during their residence must contain criteria other than grades alone.

Guidance administration is an individual student-instructor relationship fortified by the counselors' knowledge of the advisees' characteristics. Active students must be counseled on a follow-up basis, as must be withdrawals and non-reregistrants.

Freshman-week programs must be based upon student needs.

**Finance:** Conclusions were:

Budgetary requests must be formulated by the departmental staff but must be approved by the department head. The budget must cover all departmental activities, provide for emergency expenditures, and the replacement of
obsolete equipment. Also there must be a clear line of demarcation between funds allocated for instruction and those for supplies.

The department must have a salary schedule, the formulation of which included the participation of the departmental staff.

If financial aid is given to students it must be on the basis of need.

**Physical Setting.** Conclusions were:

Planning for expansion of the industrial arts physical plant must be included in the institutional master building plan. In addition, if possible, a representative of the industrial arts department should be included on the institutional planning committee.

Before the industrial arts physical plant construction begins the following points must be verified: (1) offices are to be in the immediate proximity of the laboratory, (2) the plans provide for a high degree of flexibility, (3) storage space equal to 30 per cent of the total allocation is anticipated, (4) provisions must be made for the incorporation of permanent display space for student work, (5) student locker space must be equal to or exceed one cubic foot per student, (6) the provision is made for an under-floor exhaust system, and (7) the floor space for the laboratory must provide for a minimum of 100 square feet per student, with at least
100 per cent more work stations than the student potential at any one time.

Equipment purchased must be equal to or better than that found in industry, and in sufficient quantity for the department to attain its objectives. The utilization of such equipment must be in accordance with the latest industrial procedures, which should include color dynamics. These procedures must be in agreement with industrial safety practices.

The overall illumination must equal 100 foot candles at bench height with supplementary lighting on machines and in other areas requiring such light as specified by lighting consultants.

Public and Professional Relations. Conclusions were:

Approval for publicity releases concerning the department must be given by the department head.

Catalog descriptions of departmental offerings must be in keeping with ethical practices.

The departmental staff must utilize lay advisory groups in planning the program.

The industrial arts program must have represented among its professional activities an honorary fraternity in industrial arts education.

The results of the study apparently support the
hypothesis that a comprehensive coordinated plan for the administration of certain phases of work in the industrial arts departments of American Colleges and Universities is needed. The plan must interpret the salient characteristics of the society which is technological and essentially democratic. The study has shown that there are those who recognize the need for such a plan.
BIBLIOGRAPHY
BIBLIOGRAPHY


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Part IV

APPENDIXES
Appendix A

LETTER OF TRANSMITTAL
Dear Sir:

As a part of the requirements for a Ph.D. at The Ohio State University, I am making a study of the Organization and Administration of Industrial Arts Education at the Baccalaureate Level in Colleges and Universities in the United States with special reference to those practices which may be considered "superior." I have examined approximately 200 references to formulate the list which follows.

Please indicate your belief in the statements of practice listed on the attached sheets by checking Yes or No. Your assistance is also requested in refining the present list. Please add to or delete any item. You and 29 other departmental heads are being asked to assist in this study because of the breadth of your experience in industrial arts education.

After this list has been refined, it will be used to assist in the projection of such practices in the State Colleges of California. Your cooperation will therefore be deeply appreciated.

Sincerely yours,

APPROVED BY:

LESLIE E. STEPHENSON
Assistant Professor of Industrial Arts Education

PROFESSOR WILLIAM E. WARNER
The Ohio State University
Appendix B

INQUIRY FORM
ORGANIZATIONAL AND ADMINISTRATIVE PRACTICES

IN INDUSTRIAL ARTS EDUCATION

Name of Reviewer _____________________________________________

Title of Reviewer ____________________________________________

Name of Industrial Arts Program _____________________________

Please indicate the allocation of your program, i.e. to Engineering, to Education, to __________________________

Instructions: Please insert an (X) according to your belief, in the column preceding each statement. You are encouraged to make changes in the statements in any manner seen fit, and to add to the list.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>A. Program Development</td>
<td></td>
</tr>
<tr>
<td>1. The formulation of statements of departmental aims is a continuing process of revision to express changing social, economic, and technological conditions of society.</td>
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<tr>
<td>2. Statements of aims must be sufficiently explicit to provide a basis for curriculum construction and conversely to express the actual offerings of the department.</td>
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<tr>
<td>3. The department head formulates and approves all educational policies to be presented to the college administration for confirmation.</td>
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<tr>
<td>4. The department head is responsible for the initiation of programs looking toward the improved morale of the instructional staff.</td>
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<tr>
<td>5. The use of reference materials for the industrial arts program receives the same consideration as tools.</td>
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</tr>
<tr>
<td>6. The development of departmental curricula is based on departmental or professional aims.</td>
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288
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>7.</td>
<td>Department curricula undergo continuous study and revision.</td>
</tr>
<tr>
<td>8.</td>
<td>The program aids students in richly satisfying the demands for orientation and specialization.</td>
</tr>
<tr>
<td>9.</td>
<td>Supervision of departmental extracurricular activities contributes to the attainment of its professional objectives.</td>
</tr>
<tr>
<td>10.</td>
<td>Departmental programs looking toward the improvement of instruction are founded upon research.</td>
</tr>
<tr>
<td>11.</td>
<td>The improvement of instruction rests primarily upon the instructors.</td>
</tr>
<tr>
<td>12.</td>
<td>The department has a program to encourage the continuing growth of its alumni.</td>
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<tr>
<td>13.</td>
<td>Departmental objectives are compatible with those of the institution.</td>
</tr>
<tr>
<td>14.</td>
<td>The program provides for the needs of areas in which graduates are employed.</td>
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</table>

**REMARKS:**

**B. Staff Personnel**

15. Administrative personnel within the department have authority commensurate with their responsibility.

16. Administrative functions and their allocation are clearly defined.

17. Departmental executives delegate routine matters to assistants.

18. Executive powers of the department are exercised by the department head.
19. Actions affecting individual members of a department receive the collective consideration of the departmental staff.

20. Members of departmental standing committees are rotated regularly.

21. The major responsibility for departmental representation rests with the department head.

22. Statistical studies of student records and other academic facts for the guidance of the department head and staff members are centralized under a staff member responsible to the department head.

23. Faculty members are encouraged to participate in professional research and to publish their findings.

24. Responsibility for the organization of the department is vested in the department faculty.

25. The department head is selected by the departmental staff. If your answer is "yes," do you support such a policy or practice?

26. The departmental staff and college administration both participate in the selection of a department head.

27. Qualifications of department heads and staff members include professional and specialized training in the field of industrial arts.

28. The departmental staff possesses a cultural background and the preparation adequate for the attainment of the educational objectives of the department.

29. Job specifications and standards relating to faculty performance are formulated as a guide for appointments and promotions.
30. Probationary appointments are followed by tenure when the college is assured that the teacher is adapted to his assigned work.

31. Criteria of worth and fitness of faculty members include training, experience, teaching and research experience, and personality.

32. The principal criterion for promotion of a faculty member is the successful performance of his duties, whether instruction or research.

REMARKS:

C. Student Personnel

33. Personnel records are made for each applicant at the time of his departmental admission.

34. A complete record of essential academic facts is readily available to the departmental staff.

35. The operation of extra-class activities allows a high degree of spontaneity and self-direction on the part of the students concerned.

36. Student extra-class activities are supervised and coordinated by a permanent staff member responsible to the department head.

37. The degree of attainment of educational objectives by a given student is measured by criteria other than credits and grades during his residence.

38. Counseling of students is conducted by instructors on an individual basis.
39. The administration of guidance consists of full knowledge of the characteristics and progress of the individual.

40. Student personnel activities are coordinated through the centralization of records.

41. Guidance administration makes definite provision for follow-up interviews to check on the reaction of the students to the counsel given.

42. The guidance program includes provisions for following up all students who withdrew or fail to re-register.

43. Freshman-week programs are based upon the immediate interests and problems of freshmen in the department.

REMARKS:

D. Finance

44. All budgetary requests from the department staff are assembled and approved by the departmental head.

45. Budgetary control covers all departmental activities.

46. The execution of the departmental budget provides for emergency expenditures.

47. A faculty salary schedule with periodic increments is essential.

48. The faculty participates in the formulation of the institutional salary scale.

49. Financial aid to students is distributed on the basis of personal need.
<table>
<thead>
<tr>
<th>Yes/No</th>
<th>SUPERIOR PRACTICES</th>
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<tbody>
<tr>
<td></td>
<td>50. Budgetary provisions are made for the replacement of obsolete equipment.</td>
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<tr>
<td></td>
<td>51. Clear lines of demarcation exist between funds for instruction and those for supplies.</td>
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<td>52. The department head controls the expenditure of departmental funds.</td>
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REMARKS:

E. **Physical Setting**

<table>
<thead>
<tr>
<th></th>
<th>53. All equipment is representative of industry.</th>
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<tr>
<td></td>
<td>54. There is sufficient laboratory equipment to accomplish program objectives.</td>
</tr>
<tr>
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<td>55. Each laboratory meets industrial safety requirements.</td>
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<td></td>
<td>56. Staff offices are in the immediate proximity of the laboratories.</td>
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<td></td>
<td>57. Physical facilities reflect a high degree of flexibility.</td>
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<td></td>
<td>58. Storage space equals approximately 30 percent of the total space allocated.</td>
</tr>
<tr>
<td></td>
<td>59. Storage space is readily accessible.</td>
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<tr>
<td></td>
<td>60. Provision is made for the display of student work.</td>
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<tr>
<td></td>
<td>61. Planning for physical plant development is included as a part of over-all institutional planning.</td>
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<td>Yes</td>
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REMARKS:

F. Public and Professional Relations

|     |    | 69. Supervision of departmental publicity is centralized with the department head. |
|     |    | 70. The catalog description of departmental offerings is accurate, brief, honest, clear, and concise, and uses comparable terms. |
|     |    | 71. The departmental staff utilizes lay advisory groups in planning the program. |
|     |    | 72. The program has represented among its professional activities, an honorary fraternity in industrial arts education. |

REMARKS:
APPENDIX C

FOLLOW-UP LETTER
Dear Sir:

Please recall my letter of 15 April and the inquiry form concerning Administration Practices in Industrial Arts Education.

Your response has not been received and is sorely needed if I am to have the advantage of your counsel.

A fresh copy is enclosed for your immediate attention because my time is running out. Please let me hear from you.

Sincerely,

APPROVED BY:

LESLIE E. STEPHENSON  
Assistant Professor  
Industrial Arts Education

PROFESSOR WILLIAM E. WARNER  
The Ohio State University

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APPENDIX D

LIST OF JURORS
Dr. Glenn S. Duncan, Head, Industrial Arts Department, Chico State College, Chico, California.

Professor Marion A. Grosse, Head, Industrial Arts Department, Fresno State College, Fresno, California.

Dr. C. Thomas Dean, Head, Industrial Arts Department, Long Beach State College, Long Beach, California.

Dr. Clifford Dobson, Head, Industrial Arts Department, Los Angeles State College, Los Angeles, California.

Dr. Kenneth Phillips, Head, Industrial Arts Department, San Diego State College, San Diego, California.

Dr. Dwight W. Nichols, Head, Industrial Arts Department, San Francisco State College, San Francisco, California.

Dr. Heber A. Sotzin, Head, Industrial Arts Department, San Jose State College, San Jose, California.

Dr. Richard E. Fisher, Head, Industrial Arts Department, Pacific Union College, Angwin, California.

Dr. Kermit A. Seefeld, Head, Industrial Arts Department, University of California, Santa Barbara College, Santa Barbara, California.

Dr. Carl E. Frankson, Head, Industrial Arts Department, State Teachers College of New Jersey, Montclair, New Jersey.

Dr. Donald Malley, Head, Industrial Arts Department, University of Maryland, College Park, Maryland.

Dr. Robert Helsby, Head, Industrial Arts Department, State University of New York, Teachers College at Oswego.

Dr. Kenneth W. Brown, Head, Industrial Arts Department, New York College for Teachers, Buffalo, New York.

Dr. Shriver Coover, Head, Industrial Arts Department, State Teachers College, California, Pennsylvania.

Dr. Roy O. Bergengren, Jr., Head, Industrial Arts Department, University of Florida, Gainesville, Florida.

Professor Otis L. Freeman, Head, Industrial Arts Department, Middle Tennessee State College, Murfreesboro, Tennessee.
Dr. William D. Stoner, Head, Industrial Arts Department, Miami University, Oxford, Ohio.

Dr. J. L. Feirer, Head, Industrial Arts Department, Western Michigan University, Kalamazoo, Michigan.

Professor E. W. Tischendorf, Head, Industrial Arts Department, Kent State University, Kent, Ohio.

Professor Coleman Hewitt, Head, Industrial Arts Department, Chicago Teachers College, Chicago, Illinois.

Professor Lawrence C. Secrest, Head, Industrial Arts Department, Northern Illinois University, Dekalb, Illinois.

Dr. M. Ray Karnes, Head, Department of Industrial Education, University of Illinois, Urbana, Illinois.

Dr. Otto A. Hankammer, Head, Department of Industrial Arts, Kansas State Teachers College, Pittsburg, Kansas.

Professor E. L. Barnhart, Head, Department of Industrial Arts, Kansas State Teachers College, Emporia, Kansas.

Professor Cary L. Hill, Acting Head, Industrial Arts Department, Oklahoma State University, Stillwater, Oklahoma.

Professor R. H. Larson, Head, Industrial Arts Department, State Teachers College, St. Cloud, Minnesota.

Dr. Alvin I. Thomas, Head, Industrial Education Department, A & M College, Prairie View, Texas.

Dr. Loyd W. VandeBerg, Head, Department of Industrial Arts, Eastern Washington College of Education, Chanaey, Washington.

Dr. Charles Rice, Head Department of Industrial Arts, Western Washington College of Education, Bellingham, Washington.

Dr. Ralph O. Gallington, Head, Industrial Arts Department, Southern Illinois University, Carbondale, Illinois.

Dr. Walter E. Burdette, Head, Industrial Arts Department, Arizona State College, Tempe, Arizona.

Dr. Victor L. Bowers, Head, Industrial Arts Department, Southwest State Teachers College, San Marcos, Texas.
Professor Doyle Kemper, Head, Industrial Arts Department,  
Southwest Missouri State College, Springfield, Missouri.

Dr. B. Harry Gunderson, Head, Industrial Arts Division,  
Northern State Teachers College, Aberdeen, South Dakota.
APPENDIX E

COMMENTS OF JURORS CONCERNING THE PROPOSED
LIST OF PRACTICES
COMMENTS OF JURORS CONCERNING THE PROPOSED LIST OF PRACTICES

A. Program Development

1. The formulation of statements of departmental aims is a continuing process or revision to express changing social, economic, and technological conditions of society.

The jurors made the following comments:

"Change does not mean improvement."

"Revision should and must be within practical limits."

"This should be done by making a policy statement periodically by the department."

2. Statements of aims must be sufficiently explicit to provide a basis for curriculum construction and conversely to express the actual offerings of the department.

The jurors made the following comments:

"Courses should be revised periodically by a common courses."

3. The department head formulates and approves all educational policies to be presented to the college administration for confirmation.

The jurors made the following comments:

"Should be formulates or approves."

"Should be faculty instead of head."

"This type of operation shouldn't happen in a democracy, not if you wish the best possible program."

"Department heads should approve but not necessarily formulate the policies."
"Not always, the staff works on this too if correctly done."

"This should be done with staff participation."

"This would be an undemocratic procedure and would not be tolerated at University."

4. The department head is responsible for the initiation of programs looking toward the improved morale of the instructional staff.

The jurors made the following comments:

"The staff also has a responsibility for staff problems."

5. The use of reference materials for the industrial arts program receives the same consideration as tools.

The jurors made the following comments:

"It should happen but never seems to."

"Should received balanced consideration."

In respect to this practice several jurors thought that the word selection should also be included. Consequently the revised statement will read:

The selection and use of reference materials for the industrial arts program receives the same consideration as tools.

6. The development of departmental curricula is based on departmental or professional aims.

The jurors made the following comments:

"Should include philosophy also."

"Should include the need of the students."
In respect to this practice several jurors thought that the word professional should be removed since any activity of the department should be professional. Consequently the revised statement will read:

The development of departmental curricula is based on departmental aims.

7. Department curricula undergo continuous study and revision.

The jurors made the following comments:

"Change is not necessarily progress."

"Too many programs haven't changed in 25 years."

8. The program aids students in richly satisfying the demands for orientation and specialization.

The jurors made the following comments:

"I do not believe in specialization within the field of Industrial Arts."

"Specialization is something I have never understood in general education. I don't think one can have it in industrial arts."

9. Supervision of departmental extra-class activities contributes to the attainment of its professional objectives.

The jurors made the following comments:

"What activities are extra-class activities?"

"Most programs are not supervised but they should be."

"I do not understand the use of supervision as it applies to the extra-curricular program."
10. Departmental programs looking toward the improvement of instruction are founded upon research.

The jurors made the following comments:

"As much as possible."

"Should be but aren't."

"Should be but usually aren't, not enough time."

"Not necessarily."

"Should be but not true in many cases."

11. The improvement of instruction rests primarily upon the instructors.

The jurors made the following comments:

"With the department head."

"This is a joint administration and faculty function."

"The staff should work cooperatively to evaluate each others work."

"I believe primary responsibility rests with the department head."

Several jurors mentioned that the responsibility for the improvement of instruction rested with the department head. However, it was felt that these persons were not interpreting the practice as it was intended, as the literature was very clear on this point.

12. The department has a program to encourage the continuing growth of the alumni.

The jurors made the following comments:

"There should be a professional progress conference each spring to which all alumni should be invited."
"I see no reason for the department to have such a program."

"How can this be made realistic?"

"The states should set up some sort of program for graduates of the state schools."

13. Departmental objectives are compatible with those of the institution.

The jurors made the following comments:

"This is OK providing the institution favors industrial arts."

"They should be governed by an educational policy of some type."

14. The program provides for the needs of areas in which graduates are employed.

The jurors made the following comments:

"Students should receive training which leaves them with an open minded attitude which in turn makes them ready for a change."

"We think this is true but have never had the money or time for a follow-up study."

"Yes and No--maybe the employment area needs some modification. That is, from a vocationally oriented program to one of general education."

"But not limited by what has been and what is in the area. Should be designed to promote improvement."

"Industrial arts must also be projected into new fields of study."

B. Staff Personnel

15. Administrative personnel within the department have authority commensurate with their responsibility.
The jurors made the following comments:

"Should have but rarely do."

"This is a pretty rare happening in the situations I have known."

16. Administrative functions and their allocation are clearly defined.

The jurors made the following comments:

"Should be but aren't."

"Should be but it has been my experience that they are not when it comes to the industrial arts department at least."

"Should be but are often just taken for granted."

17. Departmental executives delegate routine matters to assistants.

The jurors made the following comments:

"Should be done through arrangement at staff meetings."

"I do not believe in assistants handling anything that can be done by the department head. Too many so called routine matters become mountains if the department head doesn't know about them."

18. Executive powers of the department are exercised by the department head.

The jurors made the following comments:

"These are always based on staff decisions."

"Yes and No--some delegated executive powers seem to be OK."

19. Actions affecting individual members of the department receive the collective consideration of the departmental staff.
The jurors made the following comments:

"This is not always practical, wise or economical."

"Are students members of the department?"

"The practice should read staff members and professional problems."

"Those that are personal-no. Those that are professional and have a bearing on the welfare of others in the institution-yes."

"This should depend on the nature of the action."

Due to the numerous remarks concerning the idea of staff members only to be considered and the thought that the collective consideration should be given only to professional problems, this practice has been rewritten and will appear as follows:

Actions affecting staff members, as a result of professional problems, receive the collective consideration of the department staff.

20. Members of departmental standing committees are rotated regularly.

The jurors made the following comments:

"Sounds good and it should be done but my experience shows that once an individual gets on one and learns the ropes, he stays on."

"Yes, except chairman of the committee who should remain several years perhaps."

"NO, because of the inability to capitalize on strengths and interests."

"There is nothing sacred in rotations."
21. The major responsibility for departmental representation rests with the department head.

The jurors made the following comments: None

22. Statistical studies of student records and other academic facts for the guidance of the department head and staff members are centralized under a staff member responsible to the department head.

The jurors made the following remarks:

"These studies should remain with the registrar."

"This function belongs with the testing bureau."

"Easier to get from the registrar."

"Every department should have complete personal data on all majors."

"Should be copies of important data but not everything. Most minor information seems to be better off with the registrar now days."

23. Faculty members are encouraged to participate in professional research and to publish their findings.

The jurors made the following comments:

"Yes, but not at the expense of high quality teaching."

"Yes, but teaching should come first."

"No, not if they carry a full teaching load."

"Always."

"Let'em alone to teach their classes."

24. Responsibility for the organization of the department is vested in the department faculty.

The jurors made the following comments:

"Should include dean of instruction."
"I think the administration should have some say in this matter."

25. The department head is selected by the departmental staff. If your answer is "Yes," do you support such a policy or practice? _____

The jurors made the following comments:

"Other administrative officers on campus should be involved with the selection of the staff for the industrial arts department."

"Sounds good but I doubt that those who profess to doing so really believe in it."

Of the six persons saying that they believed in the new members of the departmental staff being selected by the departmental staff, one person did not support such a plan.

26. The departmental staff and college and administration both participate in the selection of a department head.

The jurors made the following comments:

"The college president seems to do the job wherever I have been."

"Mainly the college administration should do the selecting."

"The administration must participate but not until the departmental staff is satisfied."

"The entire college staff should be in on it."

27. Qualifications of department heads and staff members include professional and specialized training in the field of industrial arts.

The jurors made the following comments:

"Actions in the past have proven that while this is desirable it is not true in many cases."
"This is not the practice followed by some institutions; other things such as politics enter in."

28. The departmental staff possesses a cultural background and preparation adequate for the attainment of the educational objectives of the department.

The jurors made the following comments:

"Should be the policy but is not on many cases."

"Quite often too many art teachers are employed in industrial arts departments."

29. Job specifications and standards relating to faculty performance are formulated as a guide for appointments and promotions.

The jurors made the following comments:

"Job specifications cannot be worked out for teaching positions. The idea of standards is OK."

"This is something that a lot of institutions have in writing but as a policy they do not follow them."

30. Probationary appointments are followed by tenure when the college is assured that the teacher is adapted to his assigned work.

The jurors made the following comments:

"I do not believe in tenure. It simply makes it almost impossible to get rid of dead wood."

"Too many instructors go sour after they receive tenure. This fit department heads after they get in charge also."

31. Criteria of worth and fitness of faculty members include training, experience, teaching research experience, and personality.
The jurors made the following comments:

"Include the ability to teach."

"--and more."

"Should be an ideal but difficult to put on paper."

"Criteria of worth should be based in the following order: (1) teaching, (2) research, (3) professional competence, (4) university service."

"Disregard personality and add competence in these areas. I have had enough of the personality operators."

"Character should be added to this one."

"Should add participation in educational events."

32. The principal criterion for promotion of a faculty member is the successful performance of his duties, whether instruction or research.

The jurors made the following comments:

"Instead of successful performance I believe it should be outstanding performance."

"Amount of education and experience should be added."

"Add and how much he does to advance his profession."

"Further academic study should come first."

"Should require doctorate at upper levels."

"Scholarship should be first, successful teaching second, and research third."

C. **Student Personnel**

33. Personnel records are made for each applicant at the time of his departmental admission.
The jurors made the following comments:

"Not necessary for the department."

34. A complete record of essential academic facts is readily available to the departmental staff.

The jurors made the following comments:

"Not necessary for successful staff operation."

35. The operation of extra-class activities allows a high degree of spontaneity and self-direction on the part of the students concerned.

The jurors made the following comments: None

36. Student extra-class activities are supervised and coordinated by a permanent staff member responsible to the department head.

The jurors made the following comments:

"Several staff members should be involved in this supervision."

"Staff supervisor should be responsible to the entire department."

"Only the professional clubs such as the industrial arts club and Epsilon Pi Tau should be supervised."

"Student activities should be coordinated by the department head."

37. The degree of attainment of educational objectives by a given student is measured by criteria other than credits and grades during his residence.

The jurors made the following comments:

"Grades should be used to measure the educational objectives."

Grades are the only things that can be recorded objectively."
"This would be ideal and some colleges say they do it. My experience has been that it is not practical."

"Has any one prepared an objective plan for this yet?"

38. Counseling of students is conducted by instructors on an individual basis.

The jurors made the following comments:

"One person on the staff should be responsible for all staff counselors and act as director."

"This should begin when the students are freshmen and last for four years."

"I do not believe that individual instructors are, on the whole, qualified to be counselors."

"Should also include rest of staff when applicable, such as in final selection for student teaching and the like."

39. The administration of guidance consists of full knowledge of the characteristics and progress of the individual.

The jurors made the following comments:

"It should but it is rare when the information can be gotten."

"The word full makes this question impossible to answer."

"Full knowledge is not necessary for a good counseling job."

In the practice as stated here, the word full interfered with jurors answering this question as many felt that full knowledge was impossible. Consequently the practice is to appear as follows:

The administration of guidance consists of as much knowledge as possible of the characteristics and progress of the individual.
40. Student personnel activities are coordinated through the centralization of records.

The jurors made the following comments:

"Departments should have their own records on students and they should be as complete as possible."

41. Guidance administration makes definite provision for follow-up interviews to check on the reaction of the students to the counsel given.

The jurors made the following comments:

"This would be fine but it doesn't happen often. No money and no time."

"I feel it is up to the student to come back in."

42. The guidance program includes provisions for following-up all students who withdraw or fail to re-register.

The jurors made the following comments:

"This should be a function of the college administration."

"I don't believe the average department could ever find the time or money to undertake such a program but I think it should be done in every case."

43. Freshman-week programs are based upon the immediate interests and problems of freshmen in the department.

The jurors made the following comments:

"It always seems to me that the information put forth is more in keeping with what the college wants the student to know than what the student would like to know. I suppose first things first."
D. Finance

44. All budgetary requests from the department staff are assembled and approved by the departmental head.

The jurors made the following comments:

"Each department member should take care of his own orders with the purchasing department. The department head can't possibly know what to approve."

"The department head should always look over the entire set of requests. This keeps the "good talkers" from getting more than their share from purchasing."

45. Budgetary control covers all departmental activities.

The jurors made the following comments:

"Should be tightened up in case of student activities. They get department in hot water from time to time."

46. The execution of the departmental budget provides for emergency expenditures.

The jurors made the following comments:

"Should be and is supposed to happen when necessary but it takes much cutting of red tape often times."

"Some states won't allow such expenditures."

47. A faculty salary schedule with periodic increments is essential.

The jurors made the following comments:

"Should be based entirely on recommendations." (Pay)

"Should be based upon merit."

"Should be used once in a while too."
48. The faculty participates in the formulation of the institutional salary schedule.

The jurors made the following comments:

"The faculty is usually not qualified to enter into administrative matters."

"The administration often says this is true but final analysis shows that it is not practiced."

"A rigid salary schedule does not encourage maximum productivity."

49. Financial aid to students is distributed on the basis of need.

The jurors made the following comments:

"Should add ability and achievement to these."

"Need is only one factor."

"Add worthiness."

"I think it should be scholarship."

50. Budgetary provisions are made for the replacement of obsolete equipment.

The jurors made the following comments:

"Should be but not practiced in very many schools. This makes it a little hard to 'interpret' industry with a 1906 machine."

51. Clear lines of demarcation exist between funds for instruction and those for supplies.

The jurors made the following comments:

"Yes, but it should be possible to take money from one fund to use in the other."

"I just don't see any reason why this is necessary."
52. The department head controls the expenditure of departmental funds.

The jurors made the following comments:

"This should be a staff function."

"The staff should have as much voice as the department head."

"This is a staff function and not the 'right' of the department head."

E. Physical Setting

53. All equipment is representative of industry.

The jurors made the following comments:

"Does not need to be to operate a general education program."

"Most of the equipment should be, but not necessarily all of it.

"All is an impossibility probably. Should be as much as possible or to the fullest extent."

In view of many jurors feeling that all was an ill-chosen word the practice has been rewritten as follows:

As much of the equipment as possible is representative of industry.

54. There is sufficient laboratory equipment to accomplish program objectives.

The jurors made the following comments:

"This is ideal and is difficult to obtain. Many schools claiming such accomplishments usually are not succeeding to any high degree."

55. Each laboratory meets industrial safety requirements.
The jurors made the following comments:

"Not necessary in most cases."

56. Staff offices are in the immediate proximity of the laboratories.

The jurors made the following comments:

"Should be away from the daily activity where it is quite and possible to work without constant interruption."

57. Physical facilities reflect a high degree of flexibility.

The jurors made the following comments:

"Only where desirable. Planning should try to make as many permanent installations as possible."

58. Storage space equals approximately 30 per cent of the total space allocated.

The jurors made the following comments:

"30 per cent is too much in some cases."

"This amount would be just about right."

"30 per cent is probably too much to expect from the planning people but should be about right actually."

"Probably not enough."

"30 per cent should be considered only adequate."

59. Storage space is readily accessible.

The jurors made the following comments:

"It should be but it is amazing to see some of the ideas which get into the completed building, no doors, no cabinets, no nothin'."
"Central storage need not be immediately accessible."

60. Provision is made for the display of student work.

The jurors made the following comments:

"Not necessary"

"The displays need to be changed once in a while also."

"Should be something done about mobile displays and school-community permanent display cases."

61. Planning for physical plant development is included as a part of the over-all institutional planning.

The jurors made the following comments:

"There is an absolute must but even the new installations are not making these provisions."

62. There are between 100 and 200 per cent more work stations provided than the maximum number of pupils using the laboratory at any one time.

The jurors made the following comments:

"This would probably be ideal but floor space usually holds this to much less."

"I believe this would be too many."

"This seems a little high to expect."

Several jurors mentioned that the word pupils should be changed to students. This was an oversight on proof reading the original inquiry sheet and will be corrected as follows:

There are between 100 and 200 per cent more work stations provided than the maximum number of students using the laboratory at any one time.
63. Supply centers are centrally located.

The jurors made the following comments:

"Each laboratory should have its own supplies."

"It shouldn't be necessary for the instructor to roam about looking for supplies."

64. General lighting is 100 foot candles at bench height.

The jurors made the following comments:

"This would more than likely be ideal according to the lighting experts but not necessary in general. Maybe OK for work on machines."

"75 foot candles would seem more like the ideal light."

65. Machines are color coded.

The jurors made the following comments:

"Not necessary. Industry doesn't do it to a great extent. Too costly."

"Probably should apply to the entire laboratory."

"Color should be used on things other than machines."

"A nice situation but many school shops mess-up the job by not following some established pattern."

"I can't make up my mind about color dynamics."

Several other jurors mentioned that color should be used in the entire shop. Consequently the statement of practice is being rewritten as follows:

School laboratories make use of color dynamics.
66. Dust collecting systems are convenient to all areas.

The jurors made the following comments:

"Not necessary if goggles are worn."

"Should be in all shops but most people have the idea that the woodshop is enough."

67. Each student has a minimum floor area of 100 square feet.

The jurors made the following comments:

"We are approaching this amount as a profession and it should be considered adequate rather than ideal. The old idea of 50 square feet is too little."

"Ideal would probably be about 75 square feet for drafting, printing, 100-125 square feet in auto, machine, and woodshops."

"Too much for light shops and not enough for heavy."

68. Each student is provided with at least one cubic foot of locker space.

The jurors made the following comments:

"Each student should have a full length locker or about six cubic feet of space."

"Students should have between six and ten cubic feet of locker space."

F. Public and Professional Relations

69. Supervision of departmental publicity is centralized with the department head.

The jurors made the following comments:

"This should be delegated to an area chief."
"A staff member should be director of publicity."

"The department head should approval all publicity released from the department."

70. The catalog description of departmental offerings is accurate, brief, honest, clear, and concise, and uses comparable terms.

The jurors made the following comments:

"Certainly should be but upon close inspection one finds that many are not."

"Most of the ones I have seen recently need revision."

71. The departmental staff utilizes lay advisory groups in planning the program.

The jurors made the following comments:

"Is this type of activity really a value to the industrial arts program. The ones I have used or dealt with have been a real source of trouble."

"They are not permitted by the president of our college."

"Should substitute the word professional for lay. Lay groups have been a source of trouble so far as we are concerned."

"This is OK to a limited extent I suppose but I don't really think it very worthwhile."

"Can you give one reason for lay groups? We find them more than useless."

"Who knows better than we?"
72. The program has represented among its professional activities, an honorary fraternity in industrial arts education.

The jurors made the following comments:

"This is a necessity for professional training."

"Leadership can be developed best this way."
Appendix F

DETAILED HISTORY OF CALIFORNIA INSTITUTIONS
CERTIFIED FOR INDUSTRIAL ARTS TEACHER EDUCATION
Chico State College

Chico State College introduced industrial arts in 1902 as the Department of Arts and Manual Training with three courses taught by Annie Swain. The College was then known as the Chico Normal School. The succeeding supervisors of manual training were Clara M. Hetschel from 1906 to 1918, Eva Baland from 1918 to 1922, and Carl J. Schreiter from 1922 to 1926. In 1926 David F. Jackey, later dean of the Division of Applied Arts at the University of California at Los Angeles, was appointed head of the Department, which then occupied a new building. Under the leadership of David F. Jackey, the program was changed to industrial arts education.

Russell B. Kidder was appointed in 1931 as head of the Department and served in that capacity for twenty years. Einer E. Siro was named coordinator of industrial arts in 1950 and was followed in that position by Glenn S. Duncan in 1956.

The Department was accredited to offer the Bachelor of Arts Degree with a Special Secondary Credential in Industrial Arts in October of 1926. In addition, courses are provided for a General Secondary Credential and a Master of Arts Degree in Industrial Arts. The Department is affiliated with the Applied Arts and Science Division. Course offerings have grown to 59 undergraduate courses and seven graduate courses. Service courses for the Science Department and elementary teacher education are also provided.

In July of 1957 the Industrial Arts Department moved into new facilities.

Fresno State College

Fresno State College, when it was established in 1911, carried the name Fresno Normal School. Manual training was included in the curriculum under the direction and instruction
of W. B. Givens. From 1914 to 1915, the primary handwork courses were named manual training, while all other courses were called industrial arts.

The new Fresno Normal School buildings, completed in 1916, provided seven shops which included wood, art metal, forging, drawing, machine shop, primary handwork, and manual training laboratory.

Lynn E. Stockwell was appointed head of the Department in 1926. A new plan, whereby the College students enrolled in industrial arts courses were assigned to the city schools for their laboratory work, eliminated most of the shop work at the College.

Marion A. Grosse, who was assigned as a part-time instructor in 1935, became head of the Industrial Arts Department in 1941. Under the leadership of Professor Grosse, plans were developed for a new industrial arts building for the new college campus. The dream of many years became a reality in 1953 when the Department of Industrial Arts moved into its new building, which has approximately 55,000 square feet of floor space.

During the past twenty years, the Department of Industrial Arts has developed from a part-time instructor and one shop program to a fully equipped building with twelve laboratories plus a staff of twelve full-time and three part-time instructors. The Department was accredited to offer the Bachelor of Arts Degree with a Special Secondary Credential in Industrial Arts in 1948. In addition, courses are offered for a General Secondary and Master of Arts Degree. The Industrial Arts Department is now in the Division of Applied Arts, which includes Home Economics.

Long Beach State College

Long Beach State College’s earliest plans included a curriculum in industrial arts. This was first implemented in the 1950-51 school year, with the Long Beach Public Schools providing shop facilities. The first shop facilities on the college campus were placed in operation during the 1952-53 school year with a staff of two men and seven majors.

The early shop facilities on the college campus included the areas of wood-working, general metalworking, and industrial drawing. Later the facilities were expanded to include nine well-equipped shops covering all areas of industrial arts.
The Industrial Arts Department was fully accredited in June of 1954, and authorized to recommend for all credentials. In the same year the department was authorized to grant the Master of Arts Degree in Industrial Arts.

Under the leadership of C. Thomas Dean, the department showed a steady growth. The curriculum was expanded and the number of student majors has steadily increased. The instructional staff was expanded to a total of ten full-time and seven part-time staff members.

Plans are now underway for a new permanent industrial arts building to be ready early in the 1960's.

Los Angeles State College

Los Angeles State College established an industrial arts department in September, 1953. Supervisors responsible for industrial arts education in the school districts within the service area of the College were appointed to an advisory committee to assist this teacher preparation program.

Claude E. Nihart, who had devoted many years to the development of the industrial arts program in the Los Angeles City School Districts, was appointed head of the new college department.

Los Angeles State College was first located on the campus of Los Angeles City College and offered college courses for only the junior and senior years. The Industrial Arts Department provided courses in electricity, graphic arts, handicraft, general metal, general wood, and machine and architectural drawing.

Achievements of the Industrial Arts Department include accreditation of the Department by the State Department of Education in June, 1955, and approval, in the same year, by the Graduate Study Committee of the curriculum leading to a Master of Arts Degree in Secondary Teaching with emphasis on Industrial Arts.

The department began in September, 1953, with sixteen students and one full-time and two part-time faculty members. Three years later, in September of 1956, the student enrollment in the Department had increased to 125 majors, 12 minors, 25 graduate students, and a faculty of four full-time and three part-time members.
Upon the retirement of Calude E. Nihart in June, 1956, Clifford G. Dobson was named head of the Department.

In September, 1958, the Industrial Arts Department moved to its new building on the new Pamona Campus of Los Angeles State College.

Pacific Union College

Pacific Union College was established at its present site of Angwin in the year 1909. Pacific Union College is a private liberal arts school; however, it has always offered work in a number of professional areas. Elementary and secondary teacher education have been an integral part of this professional training. One rather unique aspect of the general requirements for graduation from Pacific Union College is that each student must complete a minimum of six quarters hours within the Division of Applied Arts and Science. The departments comprising this Division are Industrial Education, Home Economics, and Agriculture.

The Department of Industrial Education was reorganized in 1945 and began offering a major leading to the Bachelor of Science Degree with concentration in construction, mechanics, or printing. In June, 1951, the State Department of Education accredited the teacher education programs leading to Special Secondary Credentials in Industrial Arts, Homemaking, and Music along with the General Secondary and General Elementary Credentials.

Since 1952, the Department of Industrial Education at Pacific Union College has provided industrial arts offerings to meet the general graduation requirement, a teacher education program leading to the Special Secondary Credential in Industrial Arts, and technical education in the areas of electricity and electronics, mechanics, construction, and graphic arts.

Richard E. Fisher heads the staff consisting of six instructors. A new industrial education building is under construction and will provide approximately 44,000 square feet of floor area.
San Diego State College

San Diego State College, which in 1902 possessed the name San Diego Normal School, first offered manual training. The activities included paper work, cord and cardboard work, basket weaving, bent iron work, bead work, wood carving, clay modeling, and simple furniture building. The courses offered were typical of the work in this era of education. In 1905, drawing, design, and mechanical drawing were added as activities. In 1916 courses in handicrafts and farm mechanics appeared.

Courses in printing and practice teaching were added in 1919. In 1921 courses offering work in concrete, sheet-metal, art metal, leather, electricity, internal combustion engines, patternmaking, foundry, pottery, and bookbinding were added to the curriculum. This complete industrial arts curriculum for teacher education purposes continued until the economic depression of the 1930's, when the administration discontinued shop work for budgetary reasons.

The Industrial Arts Department did not appear again at San Diego State College until 1947, when the present Department was organized. Supervisors responsible for industrial arts education in the school districts in Southern California were appointed to serve on an advisory committee to assist this teacher preparation program. Constant growth occurred with the Department and in January of 1953, under the leadership of Kenneth Phillips, the industrial arts activities were moved into the present new building. The Industrial Arts Department was accredited by the State Department of Education in 1954. New equipment, courses, and staff have been and are being added, while the enrollment of students interested in industrial arts is steadily increasing.

San Francisco State College

San Francisco State College traces its beginning to a Normal School established in 1875 by the city administration at the Girls' High School. In July, 1899, the Normal School became a state school and was moved to a new site. The school building was destroyed by fire in 1906, a new building was constructed at another location which was used until the College moved in 1953 to its present campus. The school's name was changed to San Francisco State Teachers College in 1921. The present name was adopted in 1935.

During the 25-year period from 1922 to 1947, the College provided courses under the titles of Manual Arts, Manual
Training, and Industrial and Mechanical Arts. In 1947, with the establishment of a Division of Creative Arts, a minor in industrial arts was offered to those preparing to become teachers. A program with a major in industrial arts was provided in 1951. Temporary buildings served to house the Industrial Arts Department until the Department moved to its present facilities in the Arts and Industries Building.

The Industrial Arts Department was accredited by the State Department of Education in June of 1954. In the same year, courses were offered leading to a Master's Degree in Industrial Arts Education.

Dwight W. Nichols heads a staff of four instructors. An addition to the Arts and Industries Building now under construction will provide the necessary facilities for the expanding industrial arts program.

San Jose State College

San Jose State College, originally San Jose Normal School, informally introduced manual training in the early 1870's. Charles H. Allen, principal of the old San Jose Normal School and a cutler by trade, gave instruction to certain students soon after his arrival in 1873. In 1887 a room was fitted up with a few hand tools.

Later, upon recommendation of Principal Allen, a skilled carpenter was hired to give instruction. In 1890 James E. Addicott, a graduate of San Jose Normal School, entered a training program under the guidance of Calvin M. Woodward at the St. Louis Manual Training School.

Upon completion of his work in St. Louis, James E. Addicott returned to San Jose Normal School and established the first regularly organized program of industrial training. He remained in this position until 1901.

In 1902 Edwin O. Snyder came to San Jose from the Alameda School to become head of the Manual Arts Department of the Normal School. Under his leadership and that of his successor, Andrew Hill, the work of the Department grew and progressed.

In 1913 Benjamin Spaulding became head of the Department and was responsible for the growth of the Department from a two-year to a three-year to a four-year degree course; also for the present building constructed 33 years ago. Benjamin Spaulding retired in July of 1956.
The Industrial Arts Department was accredited by the State Department of Education in April of 1925.

In 1929 Heber A. Sotzin became head of the Department. At this time the College enrollment was approximately 1700 and the industrial arts staff consisted of three full-time instructors. Since that time the college student body has grown to approximately 12,000 and the industrial arts staff has increased to nineteen instructors and two technical assistants. New courses and programs leading to a Master of Arts Degree and a General Secondary Credential are now being offered. Plans are under way for a new building of over 100,000 square feet of floor space which will adequately serve the needs of this department. The Industrial Arts Department is now in the Division of Science and Occupations.

The University of California, Santa Barbara College

The University of California, Santa Barbara College, had its inception in 1891 with the opening of a cooking school for girls by Anna S. C. Blake. In order to serve the practical needs of boys, Edna Rich was sent to study Sloyd under Gustof Larson. Upon her return, Edna Rich was made principal of the Anna S. C. Blake Training School and supervisor of manual arts for the Santa Barbara Public Schools. Teachers and administrators throughout the state visited the school to observe its work. In order to meet the needs for trained teachers in this field, a six-week summer course was offered to experienced teachers as well as to normal school and university graduates.

In 1907 Mary H. Tracy, a graduate of the Boston Sloyd Training School, was added to the staff. The state legislature, on March 27, 1909, passed a bill establishing the first special state normal school in Santa Barbara, which became the first normal school in the United States devoted exclusively to manual arts and home economics. Frank H. Ball succeeded Edna Rich Morse as president of the Santa Barbara Normal School in 1916.

In 1919 the state legislature passed a bill changing the status of the school by dropping the name Manual Arts and Home Economics. The Normal School became a four-year state teachers college in 1921. The Industrial Arts Department of Santa Barbara State College, in January of 1923, became the first of its type to be accredited by the State Department of Education.
Emanuel E. Ericson came to Santa Barbara College in 1925 and served as chairman of the Industrial Arts Department until 1948. During these 23 years Emanuel E. Ericson became a nationally recognized authority in the field of industrial arts, was instrumental in the planning and construction of a modern industrial arts building at Santa Barbara, and witnessed the college become, in 1944, a part of the University of California.

Lynne C. Monroe was appointed department chairman in 1948 and was succeeded in this position by Kermit A. Seefeld in 1953.

University of California, Santa Barbara College, moved to its new campus in Goleta in 1950. A new industrial arts building was completed on this campus during the 1957-58 school year.
I, Leslie Earle Stephenson, was born in St. Louis, Missouri, on November 2, 1922. I received my public school education in White Hall, Illinois. My undergraduate training was obtained in Shurtleff College, Alton, Illinois; Washington University, St. Louis, Missouri; the University of Maryland, College Park; and the Oklahoma State University, Stillwater, from which I graduated in 1949 with bachelor of science degrees in industrial arts education, and trade and industrial education. I also received the master of science degree in industrial arts education from the latter institution in the same year.

I served in the United States Army as a sergeant from January, 1943, until March, 1946, and as a Captain (RA) from June, 1949, until September, 1954. During my military service I performed duties in Infantry, Engineers, Artillery, and Ordnance in the Asiatic-Pacific and European Theaters of Operation. I traveled extensively in both theaters. I was employed as an instructor in the industrial arts area of The Ohio State University from the winter quarter of 1954 until I was admitted to candidacy for the Ph.D. in the spring quarter of 1956. Upon leaving The Ohio State University I was
employed as an assistant professor of industrial arts education by the San Jose State College, San Jose, California, in September 1956, the position which I hold at the present.