THE BAUHAUS AND ITS CONTRIBUTIONS TO DESIGN WITH
SUGGESTIONS FOR IMPROVEMENT OF DESIGN IN
COLLEGE INDUSTRIAL ARTS PROGRAMS

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THE BAUHAUS AND ITS CONTRIBUTIONS TO DESIGN WITH
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COLLEGE INDUSTRIAL ARTS PROGRAMS

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By

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CHAPTER I

INTRODUCTION

The twentieth century overwhelmed man with its inventions, new materials, new ways of construction, and new science. New problems required more exact knowledge, greater control of far-reaching relations, and more flexibility than the rigid schemes of tradition permitted.

It is historically interesting that everywhere in the world outstanding new industrial products emerged. These products did not follow traditional forms. They were designed in fields where function determined the form to be given. Examples of these fields are: engineering construction; optical, acoustic, chemical and medical instruments; and machinery, railway and electrical equipment. But basically it was not industry, nor technical experts, but the pioneers in the field of art who dared to proclaim the conception of "functional rightness." They created an atmosphere, stimulating a new understanding of form on the basis of changed technical, economic, and social conditions.

In Germany various groups concerned themselves with a clarification of the problems related to design from the creative standpoint. Some of the groups were as follows: the Darmstadt artists' colony at Matildenhoehe, the "youth
"style", the industrial art school movement, and above all the Werkbund.

Buildings were constructed to house these groups of educational movements, exhibitions were arranged, periodicals and a yearbook were published. All had in view the establishment of an organic tie between creative forces and industry. In America, Richardson, Sullivan, and Wright struggled toward solutions that would meet the problems of design in architecture. They recognized the creative spirit in the use of the machine brought about by bold and genuine inventors. In spite of that, industry kept on pouring out products, ignorant of its own creative potentialities, and for the most part following traditional prototypes developed by the handicrafts.

Out of the welter of rejection and approval, of demand and intuition, an idea slowly crystallized. This idea emphasized a need for a new unity between art and technology. One of the promoters of this idea was Walter Gropius, a German architect. Wishing to abolish the supremacy of intellectual work over handwork, he declared that the designer has to think and act in terms of his time and pointed out the great educational value of craftsmanship. Believing in the fundamental unity underlying all branches of design, Gropius tried to solve the problem of imaginative design and technical proficiency by organizing the Bauhaus, which
was basically a college of art in Weimer, Germany, in the Spring of 1919.¹

In less than a decade, the Bauhaus completely transformed the design of manufactured products in Europe.² Accepting the challenges of technical progress with its recognition of social responsibility, this institution became the experimental shop and laboratory of a new industrial arts movement.

Statement of Problem

This is a study of the Bauhaus and its contributions to design with suggestions for improvement of design in college industrial arts programs.

Purpose of the Study

The study of the Bauhaus is threefold in purpose. The first purpose is to study the Bauhaus, located both in Germany and in the United States, and to identify its principles, curriculum, and methods of instruction used in improving design. The second purpose is to identify and present the contributions of this school to design, the third purpose is to suggest ways and means for improvement of design in college industrial arts programs.


Need for the Study

There appears to be a definite need for this study, particularly now, as new colleges of art and technology are being established all over the world. This need is recognized from the amount of literature that has been written within recent years concerning design education in general, and design for industry in particular. Because there appears to be a need for improvement of design in industrial arts programs, this study will identify the principles, curriculum, and methods of teaching design as set forth by the staff of the Bauhaus and will attempt to suggest ways and means of improving design in college industrial arts programs.

Limitation of the Study

Although there were many books published by the Bauhaus staff about their program, only those books translated into English were used in this particular study. Consideration must also be given to the fact that this institution was closed by the Nazi regime and its staff dispersed. As a result, very little was written about the teachers of the Bauhaus and their activities in the United States. Consequently, a large part of the material presented in this study is limited to the writings of the directors of the Bauhaus while in Germany and the United States, and comments by educators through the years since the re-establishment of the school in Chicago.
Definition of Terms

Design has been defined by Lindbeck as "creative planning to meet a specific need. "Planning" in design means a serious, analytical approach. The words, 'specific need,' indicate the total awareness of the design task at hand."

Work Shop is referred to, in this study, as a laboratory where students are given practical instruction and opportunity to show their power of expression.

Industrial Design refers to "design concerned with the appearance of three-dimensional machine-made products; also: the study of the principles of such design."

Industrial Arts is defined as "those phases of general education which deal with industry--its organization, materials, occupations, processes, and products--and with the problems resulting from the industrial and technological nature of society."

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Technical Education refers to "a type of education that emphasizes the learning of a technique or technical procedures and skills."⁶

Integration in this study means "the correlation of subject matters on the basis of a common methodology governing our life, and not a new philosophical system compiled or 'integrated' from the numerous other philosophical systems."⁷

Technology is defined as "industrial science; the science or systematic knowledge of the industrial arts, especially as applied to manufacturing."⁸

Institute of Technology is defined by Good as "an institution of higher education offering instruction in applied sciences and technology, especially in the various fields of engineering."⁹

Apprenticeship refers to "the period during which a young person works under the direction of an experienced,

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⁷Ibid., p. 64.
⁸Ibid., p. 555.
⁹Ibid., p. 289.
well qualified adult to acquire increased skill and knowledge needed for the competent performance in a given occupation.\textsuperscript{10}

Functional Design is defined by Good as "a design in which primary consideration is given to the use to which an article will be put."\textsuperscript{11}

Sources of Information

Information for the study is secured from the following sources: first, from the books, magazine articles, and lectures by Walter Gropius and Laszlo Moholy-Nagy, the directors of the Bauhaus; second, from professional literature in the areas of design, industrial design, industrial arts education, and architecture; third, from the history books on German art and architecture; and fourth, from the biographies of Walter Gropius. All of the material used in this study is found in the libraries of North Texas State University and Texas Woman's University.

Plan of Procedure

One of the purposes of this study is to identify the principles, curriculum, and teaching methods of the Bauhaus. The method used for this identification includes review of the publications on the Bauhaus. The fulfillment of the second purpose, which is the identification of the contributions of the Bauhaus to design, involves the following

\textsuperscript{10}Ibid., p. 34.
\textsuperscript{11}Ibid., p. 166.
procedure: identification through a study of publications by the Bauhaus staff, buildings, projects, influences on contemporary design, and influences on the educational centers of the United States. The Bauhaus principles, curriculum, and methods of instruction for the education of a designer will be utilized to make suggestions for improvement of design in college industrial arts programs, which is the last purpose of this study.

Organization of the Study

The study was organized into five chapters. Chapter I contains an introduction to the study, a statement of the problem, the need for the study, the specific purposes of the study, limitations of the study, definition of terms, sources of information, the plan of procedure, organization of the study, and related studies.

The presentation of the Bauhaus in Germany and identification of its principles, curriculum, and methods of instruction are included in Chapter II.

Chapter III will present the Bauhaus in the United States and identify its principles, curriculum and methods of instruction.

The contributions of the Bauhaus to design are set forth in Chapter IV. In addition, suggestions for improvement of design in the college industrial arts programs are included in this chapter. Chapter V contains the summary, findings, conclusions, and recommendations.
Related Studies

In an effort to utilize the findings of research in the selected area, numerous theses and other materials were examined. While not a great number of studies were found to be closely related to the present study, a few had elements of relationship that are listed and acknowledged in this study.

The complete story of the Bauhaus in Germany was published by the Museum of Modern Arts of New York City in 1938. *Bauhaus 1919-1928* was edited by Herbert Bayer, Walter Gropius, and Ise Gropius.\(^ \text{12} \) This publication gives a detailed account of how and why the Bauhaus was established. In addition, Bayer analyzes the educational methods of the Bauhaus and what it was trying to accomplish.

In 1947, Laszlo Moholy-Nagy wrote *Vision in Motion*, which is a study of the educational methods of the Chicago Institute of Design.\(^ \text{13} \) Moholy-Nagy, who was one of the instructors in the Bauhaus in Germany, established the new Bauhaus at the Institute of Design after World War II in Chicago.

In 1954, at Tokyo, the United Nations Educational, Scientific, and Cultural Organization organized a seminar on art and crafts in general education and community life which

\(^ {12} \)Herbert Bayer, *Bauhaus 1919-1928* (New York, 1938).

\(^ {13} \)Moholy-Nagy, L., *Vision in Motion* (Chicago, 1947).
was attended by representatives from many countries. On that occasion it was decided to publish a book on "the role of crafts in school and adult education," and Seonaid M. Robertson was invited to write the book. Robertson entitled the book *Craft and Contemporary Culture*.\(^{14}\) In a chapter devoted to the Bauhaus and its educational program, a re-examination of some of the principles of the Bauhaus was included. Robertson concludes:

The practical effects of the Bauhaus on the design of almost everything we use are incalculable. Some common objects such as the tubular steel chair were designed in the Bauhaus thirty years ago, and have never been improved upon. We owe more to that group of brilliant and devoted men than we can acknowledge. I believe that the Bauhaus, rather than the usual type of college of art or technical college, must serve as a model for every new institution for higher technical training, and for the training of the designers for industry.\(^{15}\)

A publication entitled *Art and Industry* was written by Herbert Read in 1954.\(^{16}\) One of the primary purposes of the author in writing this book was to emphasize the need for a new education in respect to art and technique. He strongly recommended the use of aesthetic education in the training of designers and considered the Bauhaus "the greatest

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experiment in aesthetic education yet undertaken." He proposed a solution for the improvement of design education.

... Nothing less than a complete revision of our educational system, in so far as it is concerned with the question of art and technique, will suffice to bring about a necessary change. The possibilities of such a change of attitude, and its vitalizing effect on the design of a whole country, have been demonstrated by the Bauhaus experiment carried out under the direction of the German architect Walter Gropius. In that experiment we have had a practical demonstration of methods we can at once adopt.18

Sigfried Giedion, in his book entitled Walter Gropius - Work and Teamwork, often referred to the Bauhaus and its activities in Germany and the United States. In a chapter concerning "Walter Gropius and the Bauhaus," Giedion gave an account of the significance of the Bauhaus:

It was an attempt to bridge the gulf between the world of the spirit and the world of every day, between art and industrial production. The whole endeavor of the Bauhaus was to discover similarities between these two conflicting spheres and to make them generally known. To do this it was absolutely necessary to go back to the first principles and again to investigate the elemental nature of both art and matter.

When the world of the spirit and the world of industrial production are split entirely asunder, we find ourselves in the situation of the nineteenth century, whose Janus head faced in two opposite directions. This leads to a schizophrenic division of human life and this quality is what Walter Gropius sought to heal in the Bauhaus.20

17 Ibid., p. 107. 18 Ibid., p. 42.
20 Ibid., pp. 39-40.
James M. Fitch, in 1960, published a biography of Walter Gropius and introduced him as an educator, architect, designer, and social critic. On the principles and contributions of the Bauhaus he made the following statements:

This was the program which catapulted the Bauhaus into international prominence, making it the most important single force in the design world in the period between wars. Every field of design registered its influence; architecture, product design, furniture; fabrics, silverware and pottery; graphics, typography, painting, advertising; photography, movies, stagecraft, even ballet. And everywhere its influence was benign. As a program, its capacity to regenerate design derived from its essentially correct analysis of the relation between design and production in an industrialized world.

In its short and crisis-ridden life, the Bauhaus trained over 500 men and women in various fields. Its publications, exhibitions and lectures so precisely filled a vacuum that its influence was out of all proportion to its size. It irradiated all of Western Europe and—after Gropius' arrival at Harvard in 1937—America.21

In a book entitled Design Textbook, John R. Lindbeck treated the Bauhaus and its developments from the historical point of view and in relation to design.22 In addition, he presented the Bauhaus Principles in summarized form.

22Lindbeck, op. cit., pp. 87-89.
CHAPTER II

THE BAUHAUS IN GERMANY

The original Bauhaus - Building House - was founded by a German architect named Walter Gropius in the spring of 1919 in Weimar, Germany. Gropius' first step in establishing the Bauhaus was to combine the Weimer School of Arts and Crafts and the Weimer Academy of Fine Arts; thereby creating a consulting art center for industry and trade. His primary aim in establishing the Bauhaus was to combine art, design and technology. In respect to the principles of instruction at the Bauhaus he advocated the following:

... that the principle of training the individual's natural capacities to grasp life as a whole, a single cosmic entity, should form the basis for instruction throughout the school instead of only one or two arbitrarily "specialized" classes.1

After achieving the union between the Weimer School of Arts and Crafts and the Academy of Fine Arts at the Bauhaus, Gropius took a second important step. This step concerned the training of students by two teachers in each subject; the teachers were an artist and a master craftsman. This method of teaching was later abandoned. In respect to

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this division of instruction Alexander Dorner, one of the Bauhaus' instructors, later wrote:

The division of instruction was unavoidable at the beginning, for no teachers were to be found with sufficient mastery of both phases. To develop just such creative "ambidexterity" was the purpose of the Bauhaus.2

To carry out his plans for the method of education adopted, Gropius believed a selected staff was essential and proceeded to recruit men of outstanding merit. An Austrian teacher named John Itten was hired and came from Vienna where he had developed a completely new method for developing tactile sense, the sense of color, and the sense of space and composition. The German sculptor Gerhard Marcks and American-born Lyonel Feininger also joined at the beginning of the school. During the first few years of rapid development at the Bauhaus several outstanding European artists were added to the staff such as the Swiss-German Paul Klee, Oskar Schlemmer, Wassily Kandinsky, and L. Moholy-Nagy.3

Bauhaus had difficult years of development. There was opposition to its method of education from artists, art academies, and the public. Also it had to survive the economic difficulties of the inflation period. However, the


difficult stage of development was short lived, and the principles of the new design advocated by Gropius soon achieved acceptance. Eventually Gropius' dream to combine imaginative design and technical proficiency became a reality and a new dimension was added to functional design.\(^4\)

Because of the hostile environment in Weimer in 1925 the Bauhaus was moved to the city of Dessau, located in the heart of the German coal belt, which brought it into closer contact with industry. New functional designs were soon developed in its shops. Experimental handiwork in the Bauhaus shops led to articles related to industry which were reproduced all over the world. Manufacturers in the neighboring countries began to seek persons trained at Bauhaus to supervise their production lines. The Bauhaus soon became well known all over Europe. At this stage the first serious laboratory for the development of industrial arts was fully established. However, in the years that followed, political developments in Germany halted further advancement of the Bauhaus. In 1928, because of political pressure, Gropius resigned and Mies Van Der Rohe became the new director. There followed a more or less chaotic period. Finally, the rise of Nazism in Germany forced the closing of the Bauhaus in 1933. In the following years, many of its instructors

such as Gropius, Van Der Rohe, Moholy-Nagy, Breuer, Albers, and Kepe emigrated to the United States where they introduced and further refined the educational method of the Bauhaus.  

The Principles, Curriculum, and Methods of Instruction Used at the Bauhaus

The curriculum and methods of instruction used at the Bauhaus were based upon a set of stated principles which were:

that most students should face the fact that their future should be involved primarily with industry and mass production rather than with industrial craftsmanship;

that teachers in schools of design should be men who are in advance of their profession rather than safely and academically in rearguard;

that schools of design should, as the Bauhaus did, bring together the various arts of painting, architecture, theatre, photography, weaving, typography, etc., into a modern synthesis which disregards conventional distinction between the "fine" and "applied" arts;

that it is harder to design a first rate chair than to paint a second rate painting, and much more useful;

that a school of design should have on its faculty the purely creative and disinterested artist, such as the easel painter, as a spiritual counterpoint to the practical technician in order that they may work and teach side by side for the benefit of the student;

that thorough manual experience of material is essential to the student of design - experience at first confined to free experiment and then extended to practical shop work;

that the study of rational design in terms of techniques and materials should be only the first step in the development of a new and modern sense of beauty;

\(^5\)Giedion, op. cit., pp. 385-406.
and, lastly, that because we live in the twentieth century, the student architect or designer should be offered no refuge in the past, but should be equipped for the modern world in its various aspects, artistic, technical, social, economic, and spiritual, so that he may function in society not as a decorator but as a vital participant.6

Believing in education of the whole man, Bauhaus placed man rather than "subjects" at the head of its curriculum. Students were given the opportunity to learn to master not only themselves and their powers, but also the living and working conditions of their environment.

The first year in the Bauhaus was of decisive importance, the objective being the unification of all training in art and industry. A preliminary course was a prerequisite for all students. Their training during the first year was directed toward aesthetic education, enrichment of emotional values, and the development of thought. Concerning the Bauhaus curriculum Herbert Bayer wrote, "Practical and theoretical studies are carried on simultaneously in order to release the creative powers of the students, to help him grasp the physical nature of materials and the basic laws of design."7

Instruction in crafts and form problems was included in the preliminary course, and was a prerequisite for


advanced work beyond the first year. Gropius believed that the best training for a young designer was the old type of apprenticeship to a master-craftsman who had experience in both the aesthetic and practical aspects of his craft.

The old master-craftsmen possessed practical and formal skill in equal measure. But as they no longer exist it is impossible to serve voluntary apprenticeship. All we can substitute for it is a synthetic method of bringing practical and formal influences to bear on the pupil simultaneously by combining the teaching of first-rate technicians with that of artists of outstanding merit. A dual education of this kind would enable the coming generation to achieve the reunion of all forms of creative work, and become the architects of a new evaluation. This is why we make it a rule in the Bauhaus that every pupil and apprentice has to be taught throughout by two masters working in closest collaboration with each other, and no pupil or apprentice could be excused from attending the classes of either.

After the first year, began the period of occupational training based on free vocational selection by the student within the Bauhaus shops. For three years each student studied as an apprentice under one of the masters in wood, metal, etc., as well as other subjects peculiar to the curriculum of the Bauhaus. The training in handwork given in workshops was not an end in itself, but an irreplaceable means of education. In respect to workshop training, Gropius gave the following explanation: "The aim of this training was to produce designers who were able by their intimate

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knowledge of materials and working process to influence the industrial production of the time." An attempt was made, therefore, to produce models for industry. These models were designed and made in the workshops of the school, the objective being the creation of standardized types for daily use. Gropius explained the role of the Bauhaus in relation to industry in the following words:

The Bauhaus accepted the machine as the essentially modern vehicle of form, and sought to come to terms with it. Its workshops were really laboratories in which practical designs for present-day goods were conscientiously worked out as models for mass production, and were continually being improved on.

The demonstration of new models made in the workshops of the school, which were shown in practical use, convinced manufacturers to the extent that they often entered into royalty contracts with the Bauhaus. These contracts became a source of revenue for the school, as well as for instructors and students.

After the three-year training in handwork and design, the students were given an examination in order to obtain a "journeyman's certificate." The next stage for those who wished to continue their education was training in building. The "master certificate" of the Bauhaus was awarded upon the

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9 Walter Gropius, **Scope of Total Architecture** (New York, 1943), p. 15.

10 Herbert Read, **Art and Industry** (New York, 1954), p. 43.
completion of practical experiments with design, building materials, and studies in draftsmanship and engineering. This was the final stage of formal education at the Bauhaus. Some students then entered industry, while others became architects or teachers.\footnote{Gro\-pius, \textit{op. cit.}, pp. 15-17.}

With the passing of time, a certain homogeneity was achieved in all products, and this may well be considered an essential factor of the Bauhaus' collaborative work. The collaboration between students and their masters was possible because the masters were given wide opportunities for their own further development. Gropius strongly believed that art is not a branch of science which can be learned step by step from a book; therefore, he created a free atmosphere and gave teachers the opportunity to exercise their artistic abilities in co-operation with their students' abilities.

The products were the result of clear reflection and innumerable processes of thought and work in a technical, economic, and form-giving direction. Apparently the individual alone could not have attained this goal; it was the collaboration of many that produced designs which retained their validity for many years afterwards.
CHAPTER III

THE BAUHAUS IN THE UNITED STATES

In Chapter II the Bauhaus in Germany and its principles, curriculum, and methods of instruction were presented. This chapter will discuss the Bauhaus in the United States and identify its principles, curriculum, and methods of instruction.

After the Bauhaus in Germany was eliminated by the Nazis, its teachers and students scattered over the Western World, many to take important positions in education and industrial production. Its spirit became the guide of progressive design education throughout the world, including the New Bauhaus in this country. Many of the teachers of the original Bauhaus held positions in the United States; Walter Gropius was invited to the United States to head the Graduate School of Design at Harvard University; Mies Van Der Rohe was appointed to design all the buildings at the Illinois Institute of Technology; Laszlo Moholy-Nagy became Director of the Chicago Institute of Design. The Chicago Institute of Design was founded as the New Bauhaus by Laszlo Moholy-Nagy in 1937.

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The Principles, Curriculum, and Methods of Instruction Used at the Bauhaus

The Chicago Institute of Design is considered in this study as the Bauhaus in the United States because "it embodied the principles of the original Bauhaus" which were introduced in Chapter II.  The curriculum of the Chicago Institute of Design relied strongly on the creative powers of the individual within the group. Because the school believed that technology had become an integral part of life, it proceeded to prepare the student for an advanced industrial age. In this respect Moholy-Nagy stated, "The task therefore is to educate the contemporary man as an integrator, the new designer able to re-evaluate human need warped by machine civilization." Furthermore, the vocational goals were considered in the institution's technological training. Therefore, art and the natural and social sciences were included in the curriculum. Because the aim was integrated training, the student learned aesthetic means of expression and the technology of materials. Emphasis was also placed on the accumulation of experience in the organic and the evolutionary uses of material. Mastery of the development of functional designs was encouraged both to satisfy given needs with given means and to earn a living.

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4 Ibid., p. 64.
5 Ibid., p. 64.
A basic course, the first year's work, was the backbone of the educational program. The principles of the first year's basic course were incorporated into the curriculum of the following years and involved specializations. Three areas of technology, art, and science were included in the first year program, which consisted of theory and experimental work in constant correlation. The areas were further described as follows:

1. Technology
   Basic elements of workshop training
   a. The use of hand tools and machines
   b. Materials. An understanding of the physical properties of structural materials, such as wood, clay, plastic, metal, paper, and glass
   c. Study of shapes, surfaces, and textures
   d. Study of volume, space, and motion. A training in the fundamental elements of design

2. Art
   Basic elements of plastic representation
   a. Life drawing
   b. Color
   c. Photography
   d. Mechanical drawing
   e. Lettering
   f. Modeling
   g. Literature (Group Poetry)

3. Science
   To provide the necessary basis for the Institute's courses, enough mathematics, physics, and social sciences, as well as liberal arts, are taught.6

One aim of these integrated studies was to assist the student to develop latent aptitudes. This was considered to be very important because it was believed to have direct effect

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6Ibid., pp. 64-65.
on the student's eventual decision in respect to the choice of his field of specialization.

After the successful completion of the first year's work on the basic course, the student entered a specialized workshop for professional training. The objective of such specialized work was to provide the right atmosphere and opportunity for the study of design in theory and practice, of industrial processes and materials, and of the mechanics of a functional and creative approach. The student was encouraged to broaden his scope within various workshops, among them the industrial design workshop, the painting workshop, the light workshop, and the textile weaving workshop. According to Moholy-Nagy, "In the industrial (product) design workshop an analysis first of all is made of design potentialities in the coordination of functional, technological, economic, and social aspects." Then students were encouraged to acquire experience in working with plastics, bent veneer, plywood, glass, ceramics, and metals. In the painting workshop emphasis was placed on the mastery of color in any environment connected with any object. Ways and means of combining pigments with binders, and their proper application were also studied. In the light workshop a chain of experiments were performed in various arts, with emphasis on the investigation of light

Ibid., p. 86.
and the possibilities of colored light display. The textile and weaving workshop produced varieties of textiles, treating both theory and practice and including the reading and writing of pattern drafts. Experiments with new materials, especially plastics, were also carried out.\(^8\)

The Bauhaus in Chicago from the outset aimed at the unification of art and technology. To achieve this goal Moholy-Nagy, the founder of the school, adopted methods of instruction that sought to integrate art, science and technology. The training of a designer was directed toward conditioning imagination, fantasy and inventiveness to the ever changing industrial scene. The following are methods of instruction that were utilized by the institute to bring about an integrated education.

**New Habits of Imagination**

One of the most important methods utilized by the school aimed at the development of new habits of imagination. The student was encouraged to produce solutions to exercises that generally could not be solved by looking in books and museums. These exercises had no direct counterpart in tradition, but were built around the student's potentialities, tools, and materials, and therefore directed his vision to new and unexplored channels. The student had to use his imagination and make independent findings. Furthermore, since he was

\(^8\) Ibid., pp. 84-86.
not allowed to imitate past solutions, he was encouraged to develop the ability to find new solutions, to face new situations fearlessly, and to develop new habits of imagination.  

Functional Relationship  

Another method was a series of exercises in which complex tasks were broken down into fundamental components, so that they could be understood one after the other, and then brought into functional relationship. In these exercises the goal, however, was that elements should achieve unity, and that form must produce a coherent whole.  

A Pattern of Freedom and Restriction  

In all exercises an alternate pattern of freedom and restriction was introduced. The student was first encouraged to express himself with a great range of interpretation without any censorship; later, however, more difficult problems of the same nature required minute observation and a coordination of the eye and hand. "With this combination of approaches swift emotional decisions are brought into an organic relationship with the relatively slower process of the critical mind."  

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9 Ibid., p. 66.
10 Ibid., p. 67.
11 Ibid., p. 67.
Creative Ability

Still another series of exercises aimed at the awakening of creative ability. Sensory exercise through work with various materials was encouraged. This series of exercises consisted of: handling, feeling, and working with charts composed of textures and hand sculptures carved out of wood; making machine-wood-cuts; folding, rolling, cutting and other uses of flat paper sheets which lead to the understanding of basic three-dimensional structure. Complementary exercises included work with sheet metal and wire, plastics, glass, drawing and color, mechanical drawing, and photography.12

Correlation Between Subject Matter

A method of instruction which involved simultaneous handling of problems in various workshops, classrooms, and studios correlated the subjects of the first year curriculum and emphasized the mutual influence of technique and materials. The following is an example of how correlation between subject matters was accomplished:

... when a sculpture is made in the modeling workshop, the same sculpture is used in the photo studio to serve as a study for light and shape definition. Again the same sculpture is utilized as a departure for volume and space analysis in mechanical drafting, as a theme for drawing and color exercises, and the same object will also be analyzed in the science and technology classes. Since in such an approach many different angles must be considered, the student gains

12Ibid., p. 69.
a comprehensive understanding of the single object. He learns that this method can be utilized for various subject matters, giving him the courage to attack other problems without inhibition and fear and with a sharpened sense of logical and emotional interpretation.13

**Hand and Weight Sculpture Exercise**

The institution was of the opinion that hand sculptures have a great effect on the student's understanding of form. Hand-sculptures were made in metal, wood, clay, stone, and plastics, and were used to teach the student to recognize and produce objective quality. Through a series of exercises he learned to observe perfection in execution of flowing curvatures. A study of the technology of material was also included. New possibilities in design were explored by the use of molded thermoplastic sheets to demonstrate the potential richness of a plain if changed into a three-dimensional structure. Weight sculptures followed hand-sculptures as the student advanced and acquired experimental knowledge. They made students aware of tactile illusion. In addition, the static and kinetic qualities of forms and structures were studied.14

**Measuring Exercise**

The measuring exercises consisted of an accurate drawing of a varied set of geometric and free shape objects to be


14 *Ibid.*, pp. 73-76.
blueprinted. This pattern was cut out by various hand tools and the same pattern completed with machines. The purpose of this exercise was to coordinate hand and brain, hand tools and machines, with the eyes. It was a means to coordinate craftsmanship with planning, timing, mechanical drawing, design, and machine work.  

**Machine Exercise**

Machine exercises were introduced to provide the student with sufficient skill to use a machine as a tool in order to solve the design problems of a technological age. Machine exercises had utilitarian purposes in the specialized workshops. Emphasis was put on first-hand acquaintance with various machines and their functions. The student had the opportunity to become aware of all the functions of machines by participation in the invention and execution of machined objects.  

**Sheets, Slabs, and Joint Exercise**

A series of exercises with paper provided the basic methodology for approaching a flat sheet or slab of material such as cardboard, wire mesh, metal, plywood, and plastic. The task was to manipulate flat sheets into three-dimensional structures to be studied for hidden relationships and vital

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15 Ibid., p. 78.
16 Ibid., pp. 78-79.
processes. In addition, the student was introduced to various joints and was asked to invent new ones. As he advanced he acquired additional skill and more functional solutions were accomplished. 17

These exercises were used in developing an integrated system of education for the training of designers for industry and as educators. All of these aforementioned exercises helped the future designers and educators to evaluate tasks in terms of intuition, organization, and functional, organic unity. The results of such programs, which were primarily based on the principles of the original Bauhaus, were outstanding products that brought the Chicago Institute of Design, known as the New Bauhaus, world-wide recognition as a center of creative thought in its field.

The Bauhaus Joins the Illinois Institute of Technology

In 1949, the New Bauhaus, by that time called the Chicago Institute of Design, joined the Illinois Institute of Technology as a four year, degree-granting department. At present the Institute of Design offers both undergraduate and graduate programs in four fields: visual design, product design (industrial design), photography, and art education. The curriculum consists of an interlocking pattern of creative, technological, and cultural study, and the principles of the Bauhaus still exist.

17Ibid., pp. 81-83.
The study of design is based on three premises: the need for good design in our modern mass culture; the value of self-discovery through exploration of a comprehensive range of materials and media; and the philosophy that free experimentation in design is a necessary basis for learning to control and ultimately to apply one's artistic abilities.

Other aspects of the curriculum include the foundation year, which is a requirement for all undergraduate students. The foundation year is, to a great extent, similar to the first year program of the curriculum at the Chicago Institute of Design while under the direction of Moholy-Nagy. The specialized studies begin with the sophomore year. The sophomore year's program includes specialized study of theory and practice in either product design, or in the visual design-photography-art education group, which are similar in this year. The last two years of undergraduate studies are devoted to further specialization with increasingly challenging problems to be explored by designer and designer/educator. The graduate program offered by the Institute of Design consists of a Master of Science degree in the four areas, which are product design, visual design, photography, and art education.

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CHAPTER IV

CONTRIBUTIONS OF THE BAUHAUS TO DESIGN WITH SUGGESTIONS FOR IMPROVEMENT OF DESIGN IN COLLEGE INDUSTRIAL ARTS PROGRAMS

The establishment of the Bauhaus in the United States, its principles, curriculum, and methods of instruction were presented in Chapter III. This chapter will identify and present the contributions of the Bauhaus to design. In addition, by utilizing the Bauhaus methods and techniques, suggestions will be made as to ways and means of improving design in college industrial arts programs.

The contributions of the Bauhaus to what is generally called "modern design" appeared in a variety of ways; however, this study will consider the major contributions which directly or indirectly influenced basic principles, curriculum, and methods of instruction in design in many of the world's educational centers. These major contributions will be identified and presented in the following order: (1) publications by the Bauhaus staff; (2) buildings and building projects designed by the Bauhaus staff; (3) entries by the Bauhaus staff in national and international exhibitions; (4) the Bauhaus products and their influence on contemporary design; and, (5) influence of the Bauhaus staff on the educational institutions in the United States.
Publications by the Bauhaus Staff

During the period from 1919-1949 the Bauhaus staff published several books and articles concerning design education. These were among the best sources of information on what was known to the public as "functional design". The Bauhaus publications strongly advocated their methods of aesthetic education, and sought to convince the public of the need for achieving a unity in arts and technology. These publications, which were translated into many languages and are still widely used by the students of design, played an important role in communicating their ideas of design unity. A selected list of publications in German published by the Bauhaus staff is found in Appendix I. The most influential books in English, listed in chronological order, are:


Buildings and Building Projects
by the Bauhaus Staff

Another significant Bauhaus contribution to design, clearly presenting the ideas of that school, was their buildings which were years ahead of their time. The outstanding characteristics of these buildings were simplicity of form and superlative balance of materials. For example, the school's home building, designed by Walter Gropius, is architecturally among the most important structures built during the twenties. Gerd Hatje in his book entitled New German Architecture,¹ wrote the following concerning this building:

The "Bauhaus" ideals were fully realized for the first time in the "Bauhaus" in Dessau which was designed and built by Walter Gropius in the years 1925-26, and which is probably the most significant building of the twenties.²

The faculty and students also deserve credit in this achievement; the result of team-work at various Bauhaus workshops could be seen in the interior decoration, lighting, design and execution, fixtures, furniture, and stylized exterior lettering. At this point there follows a selected chronological list of buildings and building projects designed by Walter Gropius and Mies Van Der Rohe while teaching at the Bauhaus in Germany.

²Ibid., p. 10.
Fig. 1. Bauhaus, Dessau, 1926. Workshop wing at left, students' studios at right.
Buildings and Projects by Walter Gropius


1924 International Academy of Philosophy, Erlanger, Germany (Project)

1925-26 Bauhaus Building, Dessau, Germany

1925 Bauhaus Faculty Quarters, Dessau, Germany

1926 Toerten Housing, Dessau, Germany

1926-27 Weissenhof Prefabricated House, Werkbund Exhibition, Stuttgart, Germany

1927 Total Theater, Germany (Project)

1927-28 Municipal Employment Office, Dessau, Germany

Buildings by Mies Van Der Rohe

1929 German Pavilion, International Exposition, Barcelona, Spain

1930 The Tugendhat House, Brno, Czechoslovakia

1931 Berlin Building Exposition, Berlin, Germany

Entries by the Bauhaus Staff in National and International Exhibitions

The staff of the Bauhaus entered many national and international exhibitions, presenting design both in original prototype and copies mass-produced for commercial distribution. These presentations promoted appreciation of the new concept of design education, and opened the way to


a new way of life, as advocated by the functionalism move-
ment. Furthermore, the exhibitors were influential in dem-
onstrating Bauhaus achievements, and influenced decisions
of many institutions of higher education to adapt their
methods accordingly. One of the most successful of these
exhibits was the Deutches Werkbund at the Paris Inter-
national Exhibit of 1930. In his book entitled Walter
Gropius - Work and Teamwork,\textsuperscript{5} professionally recognized
architect and author Sigfried Giedion made the following
statement concerning this exhibit. "The success of this
exhibition in the delicate air of Paris betokened one thing
above all: a belated recognition of the work fostered by
the Bauhaus."\textsuperscript{6} The Bauhaus staff also displayed their work
at the following exhibitions.

\textbf{National Exhibitions}

Exhibition of the towns of Dessau and Zerhert,
Berlin, Germany, 1927

Hall of elementary typography, Press Exhibition,
Cologne, Germany, 1928

Transportation Pavilion for exhibition purposes,
Zentzki, Germany, 1928

Junker Pavilion, gas and water exhibition,
Berlin, Germany, 1928

Exhibitions of housing problems - Gogfa -
Berlin, Germany, 1929

Building exhibition, Berlin, Germany, 1931

\textsuperscript{5}Sigfried Giedion, Walter Gropius - Work and Teamwork

\textsuperscript{6}Ibid., p. 51.
Harvard Society for Contemporary Art, Cambridge, Massachusetts, 1930

John Becker Gallery, New York and San Francisco, California, 1931

Arts Club of Chicago, Illinois, 1931


International Exhibitions

International Theater Exposition, New York, U.S.A., 1926

Machine Age Exhibition, New York, U.S.A., 1927

Exhibition of Modern Painters and Typography, Wellesley College, U.S.A., 1928

International Exposition, Barcelona, Spain, 1929

International Exhibition, Paris, France, 1930

Teriennel Exhibition, Milan, Italy, 1936

Aviation Exhibition, London, England, 1936

The Bauhaus Products and Their Influence on Contemporary Design

The original experimental projects designed and produced in the Bauhaus workshops became the twentieth century's outstanding examples of functional design; many of the original projects are now in museums of modern art. In time these projects were mass produced, and several designs, particularly of furniture, are at present being re-produced in their original form.


8 Ibid., p. 158 and pp. 207-216.
Fig. 2. Side Chair. 1928. Chrome-plated steel tube; wood; cane. 32" h. (Collection, Museum of Modern Art)
The practical effects of the Bauhaus on the design of almost everything in use would seem nearly incalculable; however, to the extent that the availability of material permits, attempts will be made to identify these influences within the areas that concern this study. A comparison, partially by illustrations, between similarity of form and utilization of material will constitute the criteria for identification. Descriptions and pictorial studies will be presented of twenty-two original designs and examples of their modified forms.

A chair designed by Marcel Breuer in the metal workshop of the Bauhaus at Dessau in 1928, shown in Fig. 2, is the first example of the use of tubular construction in furniture with a fresh and contemporary design spirit. This cantilevered tubular chair became the prototype of many variations seen throughout the world.

Illustrated in Figures 3, 4, and 5 are reproductions of stack-row tubular chair designed at the Bauhaus. In comparison, two contemporary modifications are shown in Fig. 6 demonstrating present Bauhaus influence on form and the use of material.

Bending plywood, a common production practice, was evolved by the Bauhaus nearly forty years ago. The chairs evolved by the Bauhaus nearly forty years ago. The chairs

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Fig. 3. Marcel Breuer: Tubular chairs. Fabric seat and back rest. 1926.
Fig. 4. Stack-row tubular chairs. Bauhaus workshop at Dessau.
Fig. 5. Bauhaus stack and row chair, 1930.
Fig. 6. Contemporary tubular stack and row chairs. A selection of furniture and interiors from countries the world over, by Ernest E. Pfannschmidt, Stuttgart. 1962.
Fig. 7. Products of the Bauhaus Furniture workshop. 1927-28.
in Fig. 7, designed and built at the Bauhaus in 1928, are in contrast to the chairs shown in Fig. 6.

The Barcelona chair, shown in Fig. 8 and presented at the German Pavilion in the 1929 International Exposition at Barcelona, Spain, was designed by Mies Van Der Rohe, who succeeded Walter Gropius as the Director of the Bauhaus. This was the first chair to utilize the spring quality of bent steel legs. A frame of solid steel bars is upholstered with saddle leather straps. Van Der Rohe's furniture designs are mass produced in their original form in the United States by Knoll Associates, Inc., 320 Park Avenue, New York 22, New York. The chair shown in Fig. 9, also by Van Der Rohe, is known as the Brno Chair. It was designed in 1930 for the Tugendhat House at Brno in Czechoslovakia. Figures 10, 11, and 12 show various contemporary treatments of the use of steel bar, in contrast to the use shown in Figures 8 and 9. Fig. 10 illustrates the use of steel bar in the construction of the chair's frame, while Fig. 11 shows how it was used to form the back support of the office chair. Fig. 12 presents the use of steel bar in the construction of the swivel arm chair and the table's legs.

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10 Bayer, op. cit., p. 132.
12 Ibid., p. 43.
Fig. 8. Mies Van Der Rohe: Lounge chair (Barcelona chair). 1929. Chrome-plated steel bars; leather. 29\(\frac{1}{2}\) h. (collection, Museum of Modern Art)
Fig. 9. Mies Van Der Rohe: Armchair (Brno chair), 1930. Chrome-plated steel bars. 32", h. (Collection, Museum of Modern Art)
Fig. 11. Office chairs. (Knoll Associates, 1965 catalog)
Fig. 12. Office furniture. (Knoll Associates, 1965 catalog)
Figures 10, 11, 12, 13, 14, and 15 are examples of variations of contemporary products influenced by the Bauhaus. This influence is seen in form and use of material.

Figures 16 and 17 show some of the original Bauhaus textiles. Bauhaus textile designs were bought by the German textile industry and marketed under the trade name BAUHAUS STOFFE. The geometric patterns and texture effects of these fabrics have widely influenced modern textile design.\(^1\)

Figures 18, 19, and 20 are examples of the lighting fixtures designed and executed at the Bauhaus metal workshop; Figures 21 and 22 represent contemporary products. The treatment in respect to function and form shows the Bauhaus ideas. Here again tubular metals have been utilized.

Because of their ideas in respect to design, the Bauhaus evidently broke away from European precedent and contributed new principles for improvement of design. These ideas are shown in the use of tubular metals in the design of furniture and other household objects such as stacking furniture designed for easy storage and highly polished surfaces relieved by textures rather than ornament. Examples of the way in which the Bauhaus varied their original products were presented with their contemporary prototypes. For further pictorial examples of the contemporary furniture

\(^1\)Drexler, *op. cit.*, p. 41.
Fig. 13. Contemporary tubular chairs and stool, upholstered. (Knoll Associates, 1965 catalog)
Fig. 14. Dinette set. Chrome-plated tubular steel legs and frame. (Sears, Roebuck and Co., Spring and Summer Catalog, 1965)
Fig. 15. Three varieties of contemporary tubular coat stands.
Fig. 16. Bauhaus Textiles. 1923-1928; wool; cotton; silk; synthetics. (Collection, Museum of Modern Art)
Fig. 17. Bauhaus Textiles. 1923-1928. Wall hanging. 1927.
Fig. 18. Products of the Bauhaus metal workshop. Silver-bronze tea set with ebony handles. 1924.
Fig. 19. Products of the Bauhaus metal workshop. Lighting fixtures. 1923-1924.
Fig. 20. Products of the Bauhaus metal workshop. Chromium and frosted glass lighting fixture. 1924. Right, adjustable desk lamp. 1924.
Fig. 21. Contemporary desk lamps.
Fig. 22. Contemporary desk lamps.
and household objects that show the Bauhaus influence in their design and material utilization, see the catalogs of the manufacturers and companies whose addresses are given in Appendix II.

Influence of the Bauhaus Staff on Educational Institutions in the United States

The new design principles advocated by the Bauhaus became the subject of debate by the public at large. Numerous lectures were arranged by the Bauhaus staff in Germany and abroad. As a result the Bauhaus principles, curriculum, and method of instruction began to influence the educational methods of several major institutions in many countries in Europe, Asia, and America.

In the United States, Bauhaus teaching methods were introduced by Josef Albers and Alexander Schawinsky at Black Mountain College in North Carolina. At Harvard University, Marcel Breuer and Walter Gropius did the same. Mies Van Der Rohe, Hilbersheimer and Peterhans taught at the Armour Institute in Chicago, while Moholy-Nagy established the New Bauhaus in Chicago where Bredendieck and Kepes used the methods of the original Bauhaus. Also, former Bauhaus students have been teaching in the Laboratory School of Industrial Design in New York and at the Southern California School of Design. However, it was primarily the Chicago Institute of Design that fully adopted the educational methods
of the original Bauhaus and came to be known as the Bauhaus in the United States.\textsuperscript{14}

\textbf{Suggestions for Improvement of Design in College Industrial Arts Programs}

Of all the activities that can be conducted in industrial arts classes it appears that the design process has the most implications. The process involves creativity, the ability to make accurate judgment, research, problem-solving, and skill in rationalizing. It is also akin to the scientific method. As such it is one of the more important classroom activities, just as it is one of the more important industrial activities. Therefore, if design process for industrial arts is to be understood, fully applied, and satisfactory, the methods for teaching of design should be utilized that best serve the needs of each student. In this respect the Bauhaus experiment has proven to be very successful, and as a result of re-examining the methods used by the Bauhaus for teaching design, and by utilizing them, the following suggestions are made to serve as ways and means of improving design in the college industrial arts programs.

A basic course in design for the industrial arts undergraduate program is highly desirable. It is preferable to include this course in the first year program. If the undergraduate program already includes a basic course in design,

\textsuperscript{14}Bayer, \textit{op. cit.}, p. 216.
then perhaps a consideration of the subject matter content and methods suggested here would further aid the improvement of design.

The basic course should include the study of two related aspects of design: technical design and aesthetic design—function and form. The following studies could come under each of these two aspects of design:

1. A study of the physical properties of those structural materials that are used in industrial arts laboratories, such as wood, plastic, clay, paper, glass and metal.
2. A study of the fundamental elements of design such as volume, space, and motion.
3. A study of shapes, surfaces, and textures.

A systematic method of approach should be developed if design process is to take place with maximum efficiency. For the industrial arts laboratory training the following steps in design process are suggested: (1) definition of the problem, (2) proposal of solutions by means of sketches, (3) testing of promising solutions, (4) execution of drawings, and (5) construction of the prototype.

1. Definition of the Problem

To begin with, the student can, and must, devote considerable time to formulating design criteria for his project, e.g.: the nature of the problem should be studied—what it
must be, what it must do, and (to a much lesser extent) how it should be made and of what it should be made.

2. Proposal of Solutions by Means of Sketches

At this point, the student should explore many possible solutions through the medium of a variety of pictorial and multiview sketches.

3. Testing of Promising Solutions

Next, it is possible and highly desirable for the student to test his most acceptable sketch in three-dimensional form by means of a scale model. In so doing he must work with an open mind, because he is in a process of testing a proposed solution and not the execution of the final form. Moreover, he should try to think the piece through to construction as he executes the model.

4. Execution of Drawings

This step involves the preparation of prototype drawings. The drawings need not be elaborate but should give the information needed to construct the prototype. Pictorial and multiview drawings are useful at this stage. The student should also carry on a cost analysis which will show him how much the prototype will cost, and where, if at all, his design must be modified.

5. Construction of Prototype

Finally, the student should execute the prototype. This, for industrial arts students, is the actual stage of constructing the project in its final form.
It would seem highly desirable for the college industrial arts programs to pursue a design process which closely resembles the current industrial practices. In order to do this perhaps a rearrangement of courses would be necessary to provide longer blocks of time for creative work. However, experiments in design education such as those used by the Bauhaus have shown that improvement of design requires a constant adjustment to technological demands and adoption of industrial techniques. Therefore, with this idea in mind, the preceding steps concerning design process were suggested.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS,
AND RECOMMENDATIONS

The study of the Bauhaus was made to identify and pre-
sent its contributions to design. Information was obtained
from books, periodicals, and brochures concerned with the
Bauhaus and its faculty. In addition, this study also sought
to utilize the Bauhaus methods for suggesting ways and means
of improving design in college industrial arts programs.

Chapter I is an introductory chapter and includes the
statement of the problem, purpose of the study, need for the
study, limitation of the study, definition of terms, source
of information, plan of procedure, organization of the study,
and related studies.

Chapter II presents the Bauhaus which was originally
established in Germany by a German architect named Walter
Gropius. At the Bauhaus, Gropius introduced new principles
of design and developed the school's curriculum accordingly.
The objective was to train designers to be able to cope with
design problems of an advancing technology. The Bauhaus
faculty employed methods of instruction which were based on
the principles of design advocated by Gropius and sought to
achieve an integrated program of theories and laboratory
practices. In addition to presenting the historical development of the Bauhaus, Chapter II identifies the principles, curriculum, and methods of instruction at this institution.

Chapter III traces the development of the Bauhaus in the United States. The Chicago Institute of Design, known as the New Bauhaus, was founded on the educational program of the Bauhaus in Germany. The curriculum was modified so as to fit into the framework, philosophy, and total curriculum of education in the United States with emphasis on industrial design. The methods of instruction were also partly modified. At this institution the student was no longer trained under two teachers. In addition to identifying the Bauhaus principles, curriculum, and methods of instruction, Chapter III concludes that the Bauhaus, or the Chicago Institute of Design, eventually joined the Illinois Institute of Technology in 1949.

The contributions of the Bauhaus to design are identified and presented in Chapter IV. The method employed for the identification is a comparison between the original Bauhaus designs and their contemporary modified forms. This comparison is made partially by pictorial presentations. Furthermore, suggestions based on the Bauhaus methods are made to serve as ways and means of improving design in college industrial arts programs.

Chapter V is devoted to summary, findings, conclusions, and recommendations.
Findings

Based on the materials used in the study, the following findings are presented:

1. The Bauhaus accepted the machine as an instrument worthy of the artist and sought to come to terms with it.

2. The Bauhaus faced the problem of good design for mass production and revolutionized the principles of design and design process for industry.

3. The Bauhaus broke down the hierarchy which had divided the "fine" from the "applied arts", and pioneered an industrial arts movement.

4. The Bauhaus bridged the gap between the artist and the industrial system by training and introducing industrial designers.

5. The Bauhaus building at Dessau, Germany was architecturally one of the most important structures of the 1920's.

6. The Bauhaus contributed to contemporary design in the following ways:

   a. by the publications of its faculty
   b. by presenting its principles in the design of buildings and building projects designed and executed by the members of its staff
   c. by entries of its staff in national and international exhibitions
   d. by its products which were designed and executed in its workshops
7. The Bauhaus' influence has spread throughout the world through the teaching and work of its faculty and is especially strong in the United States.

Conclusions

The following conclusions are made based upon the findings of this study:

1. The Bauhaus was one of the most significant forces in the creation of modern design.

2. The Bauhaus methods are still fresh and cogent enough to be utilized for the improvement of design in college industrial arts programs.

Recommendations

Based on the findings and conclusions resulting from this study, the following recommendations are made:

1. A basic course in design be added to the first year program, in order to improve design in college industrial arts programs.

2. Subject matter content of the basic course should include:
   a. a study of the fundamental principles of technical and aesthetic design
   b. a study of design process for industrial arts laboratories
   c. a study of tools and materials used in industrial arts laboratories
3. The methods of instruction for the first year's basic course in design, as developed in the Chicago Institute of Design, be tested in industrial arts laboratories on an experimental basis to determine their effectiveness.
APPENDIX I
A Selected List of Publications by the Members of the Bauhaus Staff.

1919: 
Programm des Staatlichen Bauhauses, Weimer 
(Syllabus of the State School of Building, Weimer) 
a first, four-page manifesto, published by the Bauhaus.

1922:
Satzungen, Staatliches Bauhaus in Weimer 

1923:
Staatliches Bauhaus, 1919-1923, Weimer-Munich 
(The State School of Building, Weimer-Munich, 1919-1923) 
226 pp., 147 illus., 20 colored plates. Published by the Bauhaus in collaboration with Karl Nierendorf, Cologne. Typography by L. Moholy-Nagy, cover by Herbert Bayer.

1923:
Idee und Aufbau des Staatlichen Bauhauses, Weimer. 
(The Aim and Organization of the State School Building, Weimer) published by the Bauhaus.

1925-1930:
The fourteen volumes of "Bauhausbucher" 
(Bauhaus Books) 
These series were edited by Walter Gropius and L. Moholy-Nagy, and published by Albert Langen, Munich.

1925:
Internationale Architektur (International Architecture) by Walter Gropius. 111 pp., illus. Jacket design by Farkas Molnar, published by Albert Langen, Munich.

1925:
Padagogisches Skizzenbuch (A teacher's Sketchbook) by Paul Klee. 51 pp., 97 illus., published by Nierendorf, New York City.

1925:
Malerei, Photographie, Film (Painting, Photography, Film) by L. Moholy-Nagy. 133 pp., illus., published by Albert Langen, Munich.

1925:
Die Buhne im Bauhaus (The theater at the Bauhaus) by Oskar Schlemmer. 87 illus., published by Albert Langen, Munich.
1925: Neve Arbeiten der Bauhauswerkstatten (New Designs from the Bauhaus Workshops) edited by Walter Gropius. 115 pp., illus., published by Albert Langen, Munich.

1926: Punkt und Linie zu Fläche, Beitrag zur Analyse der Malerischen Elemente (From Point and Line to Plane, an Essay on the Analysis of Pictorial Elements) 198 pp., 102 figs. in text, 25 plates. Typography by Herbert Bayer, published by Albert Langen, Munich.

1930: Bauhausbauten in Dessau (The Bauhaus Buildings in Dessau) by Walter Gropius. 221 pp., illus., published by Albert Langen, Munich.
APPENDIX II
Catalogs of the following manufacturers and companies may be consulted for the contemporary modified forms of the Bauhaus products:


Herman Miller Furniture Co., Zeeland, Michigan.

Virtue Bros. Mfg. Co., 19801 South Santa Fe Avenue, Compton, California 90221.

Fibermold Corp., an affiliate of Borg-Warner Corp., 2321 Abalone Avenue, Torrance, California.

Lightolier Incorporated, 1718 Hi-Line Drive, Dallas, Texas, 75207.

Sears, Roebuck Co., Dallas, Texas 75202.

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