TO DETERMINE A SATISFACTORY COURSE OF STUDY IN
ORNAMENTAL IRON FOR SENIOR HIGH SCHOOLS IN
TERMS OF PUPILS' INTEREST, HOME NEEDS,
GOOD DESIGN, AND BY AN ANALYSIS OF
THE FIELD

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THE FIELD

THESIS

Presented to the Graduate Council of the North
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Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

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CHAPTER I

INTRODUCTION

The purpose of this study is to fulfill to some extent the felt need for projects in ornamental iron which will conform to the theories of good design and at the same time be of interest to students in senior high school. The art of design in wrought iron has long been recognized as a factor in the adornment of buildings and temples, even beyond the days of King Solomon, but until recently the public schools have not attempted the teaching of such design. The city of El Paso, Texas, is instituting a course in the 1939-1940 curriculum in which considerable time will be spent in the teaching of ornamental iron. It is possible that other school systems will follow in the steps of El Paso, and it is hoped that this study may be of some benefit to those schools when such a course is offered.

The aim of all education is to fit the individual into society in such a way that he may become a useful citizen and enjoy the privileges of life. It is the purpose of the industrial arts program to contribute to this richness of life by providing a more general education, and it is believed that this study and the offerings herein will help in this
attainment.

Definition of Ornamental Iron

Wrought iron is not only a metal used for a purpose, but it is also a metal used for the beautification and adornment of buildings, fountains, the making of furniture, and many other things of much importance. It is an iron which is malleable, soft, and easy to work into desired shapes, and of great strength when placed in its proper element. We can readily see that in ornamental iron we have a definite means of expressing design. Wrought iron will conform to the theories of line and form. It will lend itself to the theory of spacing and proportion, and to decoration by painting and hammering.

The Problem

Statement. -- The purpose of this thesis is to determine a desirable course of study in ornamental iron, for senior high schools, which will have the pupils' interest and home needs as a foundation, with all projects conforming to the theories of good design.

Validation of the problem. -- Several books and articles have been published on ornamental iron, but so far as the writer is able to ascertain, no article or book has been published which makes an attempt to evaluate the problems in terms of their interest to high school students and their need in the home. Nor has any attempt been made to evaluate a group
of such problems in terms of their conformity to good design.

Limitations of the problem. -- The writer shall limit the scope of this study to the use of wrought iron, since it is the most commonly used material for metal ornamentation, and may be worked with more ease than most metals.

Meyer, in his book on ornamentation, says that wrought iron is so ductile in nature that it admits of a rich, delicate execution of most objects.¹

Organization of Study

Approach. -- The course of study will be effected by an analysis of the field of ornamental iron in which a close study will be made of all books and publications which deal with this phase of iron work. A study will also be made of available projects and a close comparison made with those listed by the students in the questionnaire. The use of the philosophical reasonings of the various authors studied will be made and a set of drawings will then be made and evaluated in the light of their usefulness as projects for home, interest of the students, and good design.

Summary of problem. -- The results of the questionnaire to determine student interests will be summarized and the findings listed with recommendations as to projects to be drawn and submitted.

¹Frans Sales Meyer, A Handbook of Ornamentation, p. 175.
In the next chapter a report will be made on the books and periodicals which deal with the theories of design and with the use of wrought iron in the adornment of home furnishings.
CHAPTER II

ANALYSIS OF THE FIELD

Method of Selection

Because of the lack of suitable books or periodicals to be used in senior high schools for the teaching of ornamental iron work, the writer wishes to make this analysis and, with the aid of high school students, industrial arts teachers, and through a close study of the work of the best iron mongers, to place a satisfactory grouping of ornamental iron problems before the senior high schools. To determine what should be offered, a questionnaire was given to boys who were in high school to determine their interest in projects to be made. They were asked to list the things which they would like to make and also the things found in their homes which were made of wrought iron. An examination of all available books and periodicals on the subject of ornamental iron was made to ascertain the opinions of the best iron workers. The writer then took the projects most often selected by the boys and developed a scale drawing of them and then had them evaluated from the standpoint of good design by the teachers of industrial arts subjects in the North Texas State Teachers College.
Literature Available

Because of a seeming lack of interest on the part of the general public in the subject of ornamental iron, very few of the widely circulated periodicals have carried anything concerning this work. This might be explained by the fact that this work has not been offered as a phase of the school curriculum until recent years. The public has not been interested in making, but only in buying, the product. Consequently, only those magazines which are professional, and used in the field of industrial arts, have carried articles on wrought iron work. Therefore, most of the findings reported in this chapter will be from magazines in the field of industrial arts.

There are a number of books on the subject of ornamental iron, but very few of them carry anything of value to this study other than the theories of design advocated by their authors.

Books. -- Jakway, the author of *The Principles of Interior Decoration*, does not attempt to give any specific problems for making, more especially for senior high school students, but he does give us a basis from which to work on design. He says:

*Good decoration is largely a matter of correct relationships. Before a design can be accepted as excellent it must pass four tests: first, it must fit its particular purpose or function; second, it must be adapted to the material in which it is expressed; third,*
it must fit its decorative environment; and finally, apart from all considerations of fitness, it must be intrinsically good-looking.¹

Ross takes a step farther and says:

The beautiful is revealed always, so far as I know, in the forms of order, in the modes of harmony, of balance, or of rhythm.²

To show the great possibilities of design in wrought iron, the writer quotes the words of Snelgrove:

Spirals or scrolls are the most powerful shapes known to Art. A design is an orderly arrangement of lines, shapes, and colors, and these are the materials with which the designer builds his designs. Shapes or masses are the spaces in the design that are marked off by the lines.³

Since malleable wrought iron lends itself to working into spirals and scrolls, we can see the great possibility of creative expression on the part of the pupil designer. Once he has learned the theories of design, he will be able to take lines and arrange them into an orderly shape before he begins work on his material.

Spelts helps us further in conforming the wrought iron project to suitable styles. He says:

The conformation of an ornament should be in keeping with the formal structure of the object which it adorns....it is influenced also by the nature of the material of which the same is to be made. The art of ornamentation, therefore, stands in intimate relationship with material, purpose, form, and style.\textsuperscript{4}

Dragoo and Dragoo place ornamental iron or wrought iron work as a major division in their book on metal work.\textsuperscript{5} Their work was based upon the findings of the committee on Standards of Attainment in Industrial Arts Teaching.\textsuperscript{6} The committee worked during a period of six years, and during that time such outstanding men as William T. Bawden, R. W. Selvidge, and E. E. Ericson served as chairman of the group. The division of wrought iron work is of problem and problem analysis of strictly wrought iron; but no recommendations are made as to their value in high school shops. The authors are of the opinion that many pleasing and artistic effects can be produced from wrought iron by bending, pounding, or twisting wrought iron rods, sheets, or bars into valuable and interesting projects. This book is probably one of the best available on the subject of wrought iron.

Shirley and Hooper give several problems in wrought iron work, but make no effort to separate it from art metal work.


\textsuperscript{5}A. W. Dragoo and K. L. Dragoo, \textit{General Metal Shop Work}, Division III.

\textsuperscript{6}American Vocational Association, \textit{Standards of Attainment in Industrial Arts Teaching}.
In their book one or two projects are listed as models for first year students in metal work, but it is the desire of the authors to have their work considered as a collection of suggestions in the field of general metal work, with the necessary data for the construction of projects listed, and not a course of study in any particular phase of metal work.  

Marks, in his book, *Home Arts and Crafts*, says:

> Probably there is nothing in artistic metal work for the amateur which offers a more easy and decorative field than bent-iron. The outlay for tools and materials need be but trifling.  

This book also deals with all phases of craft work and very little space is given to projects, whereas several pages are devoted to the process of making curves, bindings, and spirals. Again we notice that the author does not designate a grade level in which this work is to be done. Nor is any attempt made to set up a group of projects in the field of ornamental iron.

Petersen gives only one problem which could be called ornamental iron, namely, that of a lamp bracket. His work deals almost in its entirety with machine lathe work and has little value as a source of information in this study.

---

7A. J. Shirley and J. Hooper, *Handcraft in Wood and Metal.*


Jones attempts to revive the theories of Pestalozzi in his book on metal work, and offers some excellent projects in iron work and other metals, but these projects are for junior high school level. He says:

Many ornamental and useful projects can be made of iron; and in recent years it has been used to beautify the interior and exterior of homes. The pupil will be able to make very interesting objects by bending, hammering, twisting, and riveting iron.\(^{10}\)

Butler gives general information pertaining to the organization and equipment, as well as the methods used in teaching metal work. His work is of no value to us except that his methods seem to be good; but since we are interested in securing desirable projects in iron work, no further use will be made of his work.\(^{11}\)

Driscoll presents problems in ornamental iron which were intended for the student to use as a means of learning design in its relation to the laws of the State of New York. Most of the projects are too advanced for construction in senior high school shops.\(^{12}\)

Probably the best book found by the writer of this paper was that of Bollinger.\(^{13}\) He works out some twenty-four operations, and these are followed by the projects which are divided

\(^{10}\)H. A. Jones, *Metal Work*, p. 54.

\(^{11}\)J. B. Butler, *Problems in Metal Work*.


\(^{13}\)J. W. Bollinger, *Elementary Wrought Iron*. 
into four groups. Group "B" is that of furniture and miscellaneous wrought iron projects. It is believed that this book will be of much benefit in working out the set of projects which will be suggested by high school students.

Periodical articles. -- Fludder gives us a drawing of a hand-forged reading lamp which he says will give the students a deep sense of pride and is a problem which will envoke much work in designing, drawing, and construction. Fludder thinks that the problem has a home interest because it stands out as a true aristocrat in the student's mind as well as in his home. The actual construction of a reading lamp should not begin until the boys have had some experience in forging. Fludder makes no attempt to evaluate his project as to good design, but he does defend it from the standpoint of home interest and home need.14

Anderson gives a drawing of a bird-cage support and has this comment to make concerning wrought iron work:

The art of the iron worker lends itself in a very charming way to the construction of a support for a bird-cage, for its dainty curves and lance-like upright are far removed from the atmosphere of heaviness which some might erroneously associate with the wrought metal.15

The author here attempts to defend his design in implying


that it conforms to the purpose for which it was intended and has good proportion in its parts.

Torgerson is of the opinion that many of the better schools are favoring some new courses dealing with metal. He says:

There are many things about wrought iron work which justify it as worthy of a place in the program. A boy gets a little taste of the metal trades; he handles new materials and new tools; he learns new processes or operations, such as riveting, bending, twisting, and drilling iron. There is much related material connected with this work. The art phase of this work is extremely interesting. In working with wrought iron the pupil has the opportunity for creative design.

At the present time this work has found a coveted place in the home and many artistic and useful articles can be fashioned from wrought iron. 16

The author justifies wrought iron work in the above statement and says that the end table, of which he gives a drawing, seems to be a good project for wrought iron treatment.

Booser gives us a drawing of a wrought iron stand which might be used as a stand for a fish bowl, or with slight variations it might be made into a smoking stand. He says that the instructor should see that all parts of the project are well balanced and have good proportion before they are assembled. 17

Gottshall, in his article on "A Spiral-Twist Fireplace Set," makes the following statement:

16 R. E. Torgerson, "Wrought-iron End Table," Industrial Arts Magazine, XVIII (April, 1929), 154-156.

Ten years ago any person who loved beautiful things made of iron could go into Pennsylvania or any of the New England States, and collect some of the finest things made of this metal for little or nothing. It has been only within the past decade that antique collectors have begun to gather it to sell to the trade. To day it is in great demand, and artists are designing very beautiful and useful things that can be made of wrought iron.\textsuperscript{18}

Burris gives a worthwhile discussion on the selection of projects to build in the shop. It is in keeping with the procedure followed in this study. He says:

It is encouraging to have a boy say, "I would like to make this," this being a drawing, a picture, or a description of a project that interests him. The teacher should never turn a deaf ear to such a request if the job is worth while. If the student is not ready as far as ability is concerned, to attempt the job which he wants to make, he should be directed in making the necessary steps in preparation.\textsuperscript{19}

An article on "The Decorative Use of Iron" holds to the theory that the decorative features of any craft depend upon the material used, as well as upon the skill of the craftsman. Wrought iron work is an excellent subject to study from the standpoint of material-tool process. It is the opinion of the writer of this article that the decorative uses and forms we now have did not originate as a decorative feature at all, but for a utilitarian purpose.\textsuperscript{20} This statement leads us back

\textsuperscript{18}F. H. Gottshall, "A Spiral-Twist Fireplace Set," \textit{Industrial Arts Magazine}, XVIII (February, 1929), 79.

\textsuperscript{19}W. L. Burris, "How We Choose Projects," \textit{Industrial Arts Magazine}, XXVIII (January, 1929), 13-14.

to the theories of good design which we shall use in determining whether the projects we offer in this study meet the requirements of purpose, balance, order, and harmony.

Dexter offers several problems in the field of metal work and holds almost the same opinion as does Burris concerning the child's interest. He believes that the interest of the child can be aroused by letting the child choose his own subject and project for study and construction. The good teacher will guide the child in making the selection in such a way that both the child and the teacher are pleased and the project will carry the maximum instructional values.\(^{21}\)

It will be noted from a study of Table I that no book or magazine article was found which gave suitable projects for

<table>
<thead>
<tr>
<th>Type of Material Found</th>
<th>Books</th>
<th>Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>General metal projects and project analysis..........</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Strictly wrought iron projects and project analysis.</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Discussion...........................................</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Designated projects for senior high school...........</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Evaluation of design in projects......................</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Discussion, projects, project analysis...</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

senior high schools. It will be noticed that one article did defend the design of the project given in terms of the theories of good design.

It is the purpose of the next chapter to show the procedure and give a tabulation of the results of this study up to this time.
CHAPTER III

PROCEDURE

The first step in the investigation of this study was to give the students in senior high school a questionnaire which asked them, first, to list the projects they would like to make if they were permitted to take a course in ornamental iron work, and, second, to list all the projects or articles of ornamental iron which they found in their homes. A project in ornamental iron work was exhibited to the class to be sure that they knew what the term, "ornamental iron," meant. It was explained to the students that an article might be ornamental and yet be useful. (The projects in which the students were most interested and the objects of ornamental iron found in their homes are shown in Tables 2 and 3, respectively).

The next procedure was to tabulate the results of the questionnaire and note the projects which were listed the greatest number of times. A similar tabulation was made on the second part of the questionnaire to determine the home needs.

The third step in the procedure was to make a close study
TABLE 2
PROJECTS SUGGESTED BY STUDENTS

<table>
<thead>
<tr>
<th>Projects</th>
<th>Number Choosing Same Project</th>
<th>Rank According to Students' Interests</th>
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</thead>
<tbody>
<tr>
<td>Door knocker</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Candle sticks</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Ash trays</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Brackets</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Flower pot stand</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Floor lamp</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Andirons</td>
<td>13</td>
<td>7.5</td>
</tr>
<tr>
<td>Book ends</td>
<td>13</td>
<td>7.5</td>
</tr>
<tr>
<td>Aquarium stand</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Foot stool</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Sconce</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Hinges</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Bird cage stand</td>
<td>8</td>
<td>13.5</td>
</tr>
<tr>
<td>Coffee table</td>
<td>8</td>
<td>13.5</td>
</tr>
<tr>
<td>Pipe rack</td>
<td>7</td>
<td>15.5</td>
</tr>
<tr>
<td>Screen door</td>
<td>7</td>
<td>15.5</td>
</tr>
<tr>
<td>Door stop</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Ice tongs</td>
<td>4</td>
<td>18.5</td>
</tr>
<tr>
<td>Lawn chair</td>
<td>4</td>
<td>18.5</td>
</tr>
<tr>
<td>Fire tongs</td>
<td>2</td>
<td>20.5</td>
</tr>
<tr>
<td>Porch rails</td>
<td>2</td>
<td>20.5</td>
</tr>
<tr>
<td>Chandelier</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Door handles</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Fire screen</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Ice rack stand</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Magazine rack</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Picket fence</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Shoe rack</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Stools</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Towel rack</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Tie rack</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Yard gate</td>
<td>1</td>
<td>27</td>
</tr>
</tbody>
</table>
of all available material on the design and execution of projects listed by the students in the questionnaire. After this study was made, a group of drawings was prepared which included all the projects listed more than four times by the students.

TABLE 3
PROJECTS FOUND AT HOME

<table>
<thead>
<tr>
<th>Projects</th>
<th>Number of Homes Having Same Project</th>
<th>Rank According to Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candle sticks.......</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Door knockers.......</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Bird cage stand.....</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Ash trays............</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>Andirons.............</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>Brackets.............</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Sconce...............</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Book ends............</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Ice tongs............</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Door stop............</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Weather vane.........</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Chandeliers..........</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Lawn chair...........</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Mail box.............</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Mirror frame.........</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Screen guard.........</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Shoe horn............</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Table................</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>Waste basket........</td>
<td>1</td>
<td>15.5</td>
</tr>
</tbody>
</table>

These projects were then presented to the teachers of industrial arts classes in the North Texas State Teachers College and were evaluated from the standpoint of good design and their practicability for making in a senior high school
shop. Table 4 shows the number and nature of the projects submitted to these instructors and those approved and rejected by them.

**TABLE 4**

PROJECTS SUBMITTED TO INDUSTRIAL ARTS TEACHERS

<table>
<thead>
<tr>
<th>Projects</th>
<th>Number Submitted</th>
<th>Number Approved</th>
<th>Number Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquarium stand...</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Andirons..........</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Ash trays.........</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Book ends.........</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Bird cage stand...</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Brackets..........</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Candle stick......</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Door knocker......</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Door stops........</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Coffee table......</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Flower pot stand..</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Flower pot holder..</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Foot stool........</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hinges.............</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Floor lamp.........</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Pipe racks.........</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Sconces............</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
CHAPTER IV

DRAWINGS

Purpose

It is the purpose of this chapter to show the results of the questionnaire in the form of drawings. The drawings included in this chapter are the ones selected by the students according to interest and home needs. They have all been evaluated by the industrial arts teachers of North Texas State Teachers College and are arranged according to their rank of importance in interest to the average high school boy.

The writer of this paper is indebted to the publishers, The Wrought Iron Designers, for the use of their pamphlets on Art in Iron. A number of projects were taken from this source, with only a few minor changes having been made in most projects. The changes in these projects were made in the hope that they would thereby be made more suitable for a senior high school course in iron work.

The drawings illustrating the various projects in ornamental iron work appear in the following pages.
PLATE NO. 3

FULL SIZE SIDE VIEW

CANDLE HOLDER
PLATE NO. 4

ACTUAL SIZE FRONT VIEW

CANDLE HOLDER
PLATE NO. 5

ACTUAL SIZE FRONT VIEW

ASH TRAY
PLATE NO. 7

SIDE VIEW

BRACKET
PLATE NO. 9

FLOWER POT HOLDERS
SCALE 1\(\frac{1}{2}\)" = 1'-0"

POT HOLDERS
PLATE NO. 14

ANDIRONS

FRONT VIEW

SIDE VIEW
PLATE NO. 18

FISH BOWL STAND
PLATE NO. 22

BIRD CAGE STAND

SCALE \( \frac{3}{4}'' = 1'' \)
PLATE NO. 23

PIPE RACK

ACTUAL SIZE
Results of Evaluation of Projects

The projects exhibited in this chapter were presented to the industrial arts teachers of the North Texas State Teachers College for criticism in their design and practicability for making in a senior high school shop. All teachers were of the opinion that the projects would be suitable as far as the construction was concerned, but certain recommendations were made as to the design. These teachers were contacted separately, and none of them knew what the recommendations of the others were.

There was a unanimous opinion on the same plates which were criticized, and each teacher had the same thing in mind which might be done to make the project conform to the theories of good design. Below is a list of the plates mentioned and of the criticisms offered:

Plate 1 should have the corners rounded at each side and the bottom corners should be cut square. This would be done to make the lines more uniform in their parts.

Plate 11, which is of the floor lamp, should have the scroll at the bottom of the adjustable arm made larger to break the monotony of equal sizes. This change would have a tendency to give the lamp a better sense of balance.

Plate 15, the electric sconce, should have the corners and all sharp edges rounded, which modification will make it look more adapted to the material from which it is made.

Likewise, plate 16 should have all corners rounded slightly.
Plate 19 was ruled as poor design in the light of conformity to good proportion in its curves, more especially that of the legs. It was suggested that ideas like this be conveyed to the student designer and let him make the necessary corrections.

Instead of handing a perfect drawing to the boy to make, it is the opinion of the writer that it is a better teaching procedure to give him a drawing which will cause him to do some constructive thinking in the design as well as in the execution of the project. The above criticism of the projects will guide the pupil and teacher in arriving at satisfactory designs.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

As stated in the earlier part of this paper, the purpose of this study was to determine a group of suitable projects in ornamental iron for senior high school students. This was done in terms of interests, home needs, and conformity to the theories of good design. It is believed that the method used and the results obtained have in a large measure fulfilled this purpose.

The readings in this field were limited to a few books dealing strictly with wrought iron, but many books were found which dealt with the theories of design in iron and other materials. It was from these recognized authorities that a basis of judging good design was set up for the industrial arts teachers of the North Texas State Teachers College to be used in judging the projects offered in the preceding chapter.

Senior high school students were asked to list the projects they would like to make if they were taking a course in ornamental iron. A total of thirty-two projects were named. A table was then set up in which each project was listed and
a tabulation was made of the number of times each separate project was mentioned. It was noted that some of the projects were listed more often than others. This fact can be attributed to the students' interest in that particular project or a felt need for it at home. Another table was made to show the reaction of the pupils to the part of the questionnaire which called for a list of the projects found in their homes.

It will be noticed that Table 2 shows almost the same projects as are listed in Table 3. The tables being so much alike and so closely related, the writer has reason to believe that there are definite grounds for selecting those projects which will have both interest and need as a foundation. A group of sixteen projects was chosen from the two tables and a scale drawing was made of each project. These projects were then submitted to the industrial arts teachers of the North Texas State Teachers College for evaluation in design and practicability for making in senior high school shops.

Conclusions

There are certain conclusions which can be made as a result of this study:

1. Students in senior high school have a definite preference as to projects they would like to make.

2. The choices of the students are unanimous enough to make recommendations possible for projects to be made in senior high school shops.
3. The majority of projects found in the homes of students hold enough interest to justify their place in the course of study.

4. The interests of the students are so closely related to their home needs that recommendations can be made as to the projects to be offered.

5. The projects submitted in this study have the students' interest and home need as a basis for justification.

6. The projects submitted conform to the theories of good design.

Recommendations

It is recommended that the projects presented in this thesis be used in senior high school shops where ornamental iron work is included in the curriculum.

A further study should be made in this field, or a group of similar studies in various schools should be made and a comparison of results shown.

Also a study might be made of the teaching procedures of schools offering this work, to determine the ways by which ornamental iron may be most satisfactorily taught.
APPENDIX
CHECK SHEET

Name ___________________________ School ___________

Directions

Please list below the projects or things that you would like to make if you were taking a course in ornamental iron.

Ornamental iron work includes the making of pieces of furniture and all kinds of decorative work with wrought iron.

1. ___________________________ 7. ___________________________
2. ___________________________ 8. ___________________________
3. ___________________________ 9. ___________________________
4. ___________________________ 10. ___________________________
5. ___________________________ 11. ___________________________
6. ___________________________ 12. ___________________________

Please list below the pieces of ornamental iron work found in your home. This should include any article which is made of wrought iron and is used for decorative or useful purposes.

1. ___________________________ 7. ___________________________
2. ___________________________ 8. ___________________________
3. ___________________________ 9. ___________________________
4. ___________________________ 10. ___________________________
5. ___________________________ 11. ___________________________
6. ___________________________ 12. ___________________________
EVALUATION OF DESIGN

Plate Number ______

I. This project conforms to all the elements of good design.

II. This project is not suitable for making in high school shops.

III. This project violates the principles of design for the following reasons:

1. It does not fit the use for which it was intended.

2. The material is not suited to the design.

3. It lacks balance.

4. It lacks good proportion as a whole.

5. It lacks unity of parts.

6. It lacks conformity of line.

7. The curves lack good proportion.
BIBLIOGRAPHY

Books


**Periodicals**


**Bulletins**