

DESIGN: A CONTINUUM OF LEARNING

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INTRODUCTION:

The intent of this paper is to provide for others an overview of design as a continuum of learning, design elements, and exercises through which students could experience design in as many ways as possible. The contents are the result of experimentation and research. Though ideas presented seem to be finalized statements, each person who chooses to use the paper as a resource will undoubtedly have a wealth of unique experience and adapt what is presented to suit his own needs. The course of study suggested in exercises could be covered in a quarter, yet it could also be covered over an extended period of time.

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DESIGN: A CONTINUUM OF LEARNING

"My task which I am trying to conceive is, by the power of the written word to make you hear, to make you feel—it is before all else to make you see. That and no more, and it is everything."¹

DESIGN: AN INSTRUCTOR'S DEFINITION

A functional² design definition is: manipulation of design elements, division of space with the intent of organization for order and beauty, a thought process or schema, the action of creation, the creation itself, acts of adapting, synthesizing, or simplifying already existing creations for use other than the ones originally intended, a plan of action towards a goal. Rouault once remarked, "Design is a jet of the spirit on the alert."³

DESIGN: STUDENTS' DEFINITIONS

"Design is freedom to create and skills to enable successful creation." "Design uses practice as a key word and if at first we fail, through more study and greater comprehension we can succeed. The more we do, the more we want to do." "Design is learning to admit being the creator of an object no matter how embarrassed you are." "Design is a source of inspiration, not memorization." "Design is creating awareness." "Design shows me that I am a creative individual and I can invent things in my own mind that actually look good to others. I can feel some security and develop confidence in my creative ability." "Design is creating to suit a need or occasion. It is somehow a release

that lets you express what is inside."³

One student seemed to summarize all the descriptions of design: "Skills included, design is, then, a method of living for the purpose of aiding communication between ~~one person and~~ as many people as he can reach. Design incorporates planning, anticipation, ingenuity and some physical dexterity, but mostly it's a 'function of the mind.'⁵"

THE INSTRUCTOR'S QUALIFICATIONS

Besides having competent understanding of the elements of design and stages of student development, a design instructor needs to know how to excite individuals into involvement, initiate positive learning situations, engender a sense of commitment to creation itself, and prepare students to communicate through the design elements. Part of the equipment in the instructor's pedagogical resources is awareness of: time, space, movement, man, creation, imagination, memory, reality, form, function, dreams, humor, and how to make this sense readily available to the student.⁶ The instructor is a model, a determinor of classroom atmosphere, a valuable classroom resource. Other resources upon which the instructor may draw to enrich his own presentations are: contemporary magazines, books containing artists' views of their own work, pictorial ~~histories~~ as reference sources, reproductions of master works, slides, movies, speakers, original art works, tapes of artists speaking on design, television specials and field trips. No reliable source should be overlooked.

DESIGN COURSE CONTENT:

Design is an introduction to the basic principles of design⁶ which are: balance, proportion, emphasis and rhythm,⁸ variety and unity.⁹ The foundations of a design course come from exercises using the basic elements: line, shape, space, color and texture,¹⁰ as well as dark and light,¹¹ time, mass, and movement.¹² The elements are covered simultaneously with emphasis on each element in the order mentioned above. The order came about through observing various sequential developments in the study of design. The order employed is not the only one available; it is possible to begin with color, dark and light, texture, or simply materials and tools and what they can do.

DEFINITIONS OF ELEMENTS:

Line: a descriptive mark that is longer than it is wide, describes the edge of an object, shows direction, can indicate the gesture or contour of an object.

Shape: flat, having an outline or definite contour, surface that is two dimensional.

Space: It is a realm in which exists all relationships both positive and negative.

Color or Hue: a visual or feeling sensation of warmth and coolness or brightness and dullness, can be divided into a. additive through light refraction or b. subtractive through light reflection and absorption of pigments and dyes.

Texture: surface quality that is visible through interaction of light and shade touching an object or that can be felt by touch.

Dark and Light: refers to the massing of values (or steps seen between dark and light), strongly related to color.

Time: a measure of rhythm and movement; the characteristic rhythm of a composition.

Mass or Volume: having body, weight, or ability to displace space.

Movement: parts of a creation that can actually change spacially, a pattern that the eye follows when observing a creation.

METHODS:

Methods of instructing design should vary not only from student to student but from day to day. Students frequently come from various fields of education and are on diverse levels of ability. Design is a learning continuum. There doesn't appear to be any way a student can skip a step in learning. According to Lowenfeld, children go through the following steps: "The Beginnings of Self-expression: The Scribbling Stage, 2-4 Years...First Representational Attempts: The Pre-schematic Stage, 4-7 Years...The Achievement of a Form Concept: The Schematic Stage, 7-9 Years...The Dawning Realism: The Gang Age, 9-12 Years...The Age of Reasoning: The Pseudo-Naturalistic Stage, 12-14 Years...and The Period of Decision: Adolescent Art in the High School, 14-17 Years."¹³

This is not advocating a continuous "one-to-one" instructional situation, only that once the student's abilities are ascertained, the instructor must go from there. A student may be twenty years old and be at a schematic stage of development normally attributed to children seven to nine years old.

Methods of teaching seem to be divided into many classifications.

Ten of the classifications are:

1. problem solving
2. discovery
3. lecture
4. constructive criticism
5. demonstration
6. memory
7. controlled spontaneous activity
8. direction following
9. student reports and lectures
10. diary

In problem solving, the student is given a goal to reach in as many ways as possible. One particular student felt she had a "problem" in thinking assignments through. The student was given a problem that required 150 answers in thirty minutes. After reaching twenty-five answers, she asked for help. Five questions were asked...

1) Have you exhausted all possible obvious answers? 2) Have you tried fanciful answers such as could be found in children's fairy tales? 3) Have you tried to think of how some of your friends might try to answer the problem? 4) Have you tried approaching the problem from the opposite side? 5) Why are you now desperate to answer the problem? At the end of thirty minutes ninety answers were given, of which nine were duplicates. The evidence of success was that her

worry about not being able to think things through was removed.

Discovery is the second method of instruction. The students are given materials and some limitations with which to work. They then try to find out what they can do within the given set of limitations. This particular method seems to be a mild challenge to students. It usually uses some manipulative skill that needs strengthening. It usually should help build at least two concepts simultaneously. An example of this is designing a paper sculpture by tearing colored paper and curling it. One limitation is that the shape torn should be representative of the chosen color. The other is that both shape and color should relate to a particular mood. The student's "reward" in this type of activity comes not only in the creation itself. It needs the support of praise and understanding from the instructor.

In a third method of instruction, lecture form, there can be stress on how the philosophy of a single person or of groups of people can influence later artists or even musicians, writers or the general public. This method tends to be useful in helping the student become aware of particular periods of art and what typifies these periods. This method can be supplemented with either slides or "handouts".

A fourth method of instruction is constructive criticism. Creations usually need to be shared with others before the students feel that the creation is complete because they then have communicated with others. It is in this sharing that feeling judgements (personal aesthetics) about particular works being discussed

come out into the open and can be seen in relation to actual creations. The sharpened awareness of students gained through encouragement to look critically at their own and other students' work enables students to use design principles and elements as basis for critical judgment. Over-zealous criticism (which can take on the aspect of destruction) should be avoided since it can discourage a sincere student who has not yet found his way; this tragedy can usually be avoided by concentrating on affirmative points first and then allowing negative points to equal, but not outnumber them. A non-threatening atmosphere encourages students to repeat efforts towards a goal even with initial failure.

A fifth method of instruction is the demonstration. Most students are fascinated with this one since it is done for the student and has good eye appeal. The construction of an object or illusion from materials and tools to form an idea can answer students' questions on how to do something. The construction of one- and two-point perspective, overlapping planes, size relationships, dark and light relationships; and optical jump (as used in Oriental art) seems like a revelation. After the demonstration on spatial relationships is completed, students should have the opportunity to apply principles learned as an effective way to ascertain student understanding. This also reinforces knowledge of skills employed in spatial awareness and building.

A sixth method of instruction is creating from memory and association. Three plans which help to stimulate students'

memory are:

- a) taking students on a field trip and have them look for particular things. After returning ask them to draw what they saw.
- b) giving each student a bit of colored paper and asking them to look at the bits of paper until they are sure they won't forget the color. One or two days later ask them to mix the color with water colors. Most will not retain an accurate memory of the color. A second chance, however, can bring about different results as the students relate the color to something they know they will remember.
- c) furnishing students a box with holes cut in the sides just large enough to let the hand slip in. After feeling the objects inside the box (either common household objects or foods), students are then asked to draw them. Not only memory, but imaginative re-creation of tactile awareness may be expressed.

A seventh method of instruction is spontaneous action. This exercise should include at least six or seven changes of goal or techniques used to achieve the goal. This can be done in the following ways: the successive use of multiple tools to make line and color; requiring the students to play "musical chairs" by having each one move to the next person's picture and trying to carry it further; changing the assigned goal with ideas that work in succession.

For an example on goal changing: Using the side of a stick of charcoal, draw in all the background, stop drawing background and use only the tip of the charcoal to bring out detail in the most interesting object, stop drawing detail and draw only cast shadows with the side of the charcoal, stop drawing cast shadows, re-define part of the background as a texture using only the tip of the charcoal, etc.

The eighth method of instruction involves a learning-to-follow directions exercise for simple skill learning; for example, origami and lettering. Once the skill for forming a letter or folding paper is achieved, the students can then incorporate this skill into their work in their own manner.

The ninth method takes the form of students' written reports and oral lectures. This benefits both the student who prepares the talk and the students who share the fruits of his research. The research also acquaints students with the location and quality of available resources. It is through interaction and communication with others that students learn to clarify their thought which in turn tends to help students become more proficient in their creation.

The tenth method is keeping a diary of aesthetic experience. A diary kept by students of daily observations is kind of a "magical area of grey" in learning that seems to be an essential force in the students' creativity. Perhaps it alleviates the pressure on being "original". By observing their own observations the

students learn their own sensitivities of awarenesses that are workable and peculiar (for the most part) to them alone. It seems that nature or design as seen in nature is what serves students best as a mode of inspiration. Dreams and desires also find concretization when verbalized. The students know what they want to say and do. Once a door is opened to challenge and the students are encouraged to do their own thing in their own way, the students can't seem to stop wanting to express their inner feelings and their own ideas.

There are many other diverse methods available to encourage growth of understanding and awareness in students. Most of these methods are applicable to the instruction of basic design.

The following paragraphs describe methods used to instruct students at different levels of achievement:¹⁴

On the lower elementary level, the instructor's emphasis should be on experimentation and exploration by the students, acceptance of both students and their work, and guidance of students with an appreciation through understanding of the developing stages of students' experiences. Children are primarily visually orientated. Children can normally communicate by drawing before they can verbalize or write about that which is important to them.

Upper elementary students need instructors who are more specifically trained in technical skills. The students' abilities have usually passed through more "primitive" stages and students are seeking advice in creating what to them would be more

complete expression of what they feel and see. The instructor needs to know what questions to ask students to help them further their creation. During this time, emphasis should be placed on experimentation.

Junior and senior high school students need instructors whose interests and levels of training reflect more advanced and refined views of design. This is the time when many students begin seriously thinking about future careers which could benefit from a knowledge of design. For many of these students this is the last time that they will be exposed to design elements in a classroom situation. It is important that this time be used for learning greater depths of the discipline of design since design provides a good foundation on which students can build.

The most basic level of design on the college level is for the non-art major. Design for the non-art major or the pre-teacher is the major concern of this paper. The students should learn how to recognize and use design elements for the purposes of: awareness, communication, construction and evaluation. They should gain a general knowledge of interrelationships to be found within design elements as gained through classroom activities. It helps prepare pre-teachers to later be able to instruct

others in what he has learned. Communication lines between student and instructor should be kept open for both sending and receiving knowledge. Emphasis brought about by the instructor of both art major and non-art major students is ^{on} both initiation and reinforcement of the attitude that creativity is the "best thing in the world." Sincere seeking and finding of means of expression, evaluation and appreciation helps the student cope with and grow towards mastery of himself and his surroundings, and prepares him to answer future needs. A student's knowledge of his place in the design continuum helps him be able to relate his experience with the world about him.

Design for art majors usually forms two basic categories. The first is design in its industrial and commercial functioning and the second is design as a means for high level composition (arrangement of elements) in fine arts design. The two categories actually function like two extremes of man's development. On the one hand, form and its function take on aspects of science in technological innovation and invention. On the other hand, design takes on the aspect of "art,"¹⁵ aesthetic judgment and physical dexterity used to pursue particular aesthetic concepts that the student adheres to at the given time. At this level of development, aesthetic expression and technical skills become advanced, symbolism is used in regard to intellectual expression, insight into the human condition gains emphasis as does

the means to make concrete and lasting comment in visual terms.¹⁶
 The philosophy of art ascribed to permeates what is done and
 thereby helps students form their creations.

Clear understanding of design as related to both the fields
 of humanity and science should be inculcated by the students
 through the instruction they receive. Once again exploration is
 encouraged, yet this exploration differs in kind from that of
 an elementary student. Exploration now demands: finesse that
 comes from using many already fully developed concepts, willingness
 to go "out on a limb" in daring to try to create what the students
 have never before been conscious or created in an imagined way,
 and narrowing of their fields to include major concerns in which
 to concentrate their activity.

STUDENT ALLOWABLES:

Students must be allowed to search with their imagination
 and memory for those things that stimulate a sense of space,
 time, movement and their congruity, cohesion and continuity.
 Exposure to good examples helps students to become aware of
 vital, revealing and exciting design.

Students should hear terms and experience exercises that
 expose the terms to the greatest extent. This allows students
 access to a functional vocabulary which they can use with feeling
 and understanding. The students should have the opportunity
 to apply terms both verbally and visually. Readjustment of

the vocabulary comes through students' knowledge gained through exercises. The design vocabulary needs repeated revisions throughout the course.

A student must be allowed to fail without insult and with a full awareness of why. Failure must become recognized as a tool for learning instead of a damning "badness" that reveals only a student's inadequacies.

Students should be encouraged to ask questions. These questions generally fall into why and how to do things. Students should be allowed to question validity or ethics of a particular assignment.

Students should be allowed to express different points of view. Often it is by such expression that sameness can be found as well as a "total" view of a creation. Students need to be allowed to experience instances wherein a creation can take on aspects greater than the single man who created it.¹⁷

A QUARTER'S EXERCISE PROSPECTUS:

- I. Following directions - creation of own assignment.
- II. Line - making marks - explanation and expression.
- III. Line - perspectives - proportion, space.
- IV. Line - describing a three-dimensional form - coⁿtour, gesture, scribble.
- V. Texture - an egg - light, shadow, surface, charcoal, pencil.
- VI. Texture - lumpy, smooth, shading, etc.
- VII. Texture - rubbings - incised line or shape, raised line or shape, cameo.
- VIII. Value - light and dark as it affects color.
- IX. Color - lecture on theories, demonstration of washes.
- X. Color - translation of texture into color.
- XI. Color - emotion - strength of color - flat design.
- XII. Color - masks - color as grotesque, absurd, fanciful - preparation for three-dimensional creation.
- XIII. Mass - construction paper - warm and cool.
- XIV. Mass - Colors and shapes relate (predominantly warm and cool).
- XV. Mass - sewing hand sculpture (texture feeling).
- XVI. Rhythm - student presentations - line, shape, contour (drawing).
- XVII. Movement - student presentations - time, movement, space (film and TV).
- XVIII. Dominance and subordination - as seen by denoting theme or motif, center of interest and how various areas relate to the total work.
- XIX. Time - student presentations - children's art seen as it represents sequential development.
- XX. Unity - viewing of a work to see why it functions as a whole.
- XXI. Open- individual work - product.
- XXII. Architecture and presentation.¹⁸
- XXIII. Review - all elements via art history.

LONG TERM GOALS:

1. Through communication and creativity students should feel as though they are able to draw on their own ideas and feelings since this is essential to creation.
2. There should be noticeable improvement in the students' skills, awareness, application and expression.
3. Students should feel they have learned something worth their time and effort.

LINE:

- I. Objectives: Student understanding of line as a word, a tool, a part of the total design, and as a means of preparation for other forms of creation.
- II. Key Questions: 1) What is a line? 2) In what ways can a line be made: 3) Can curved lines and straight lines successfully convey pictorially and/or symbolically anything created? 4) How does a delicate line differ from a weak line? 5) When does line form a visual mass? 6) Can line be drawn with color? 7) Can line be enformed into sculpture? 8) What makes a painting and drawing feel different? 9) What is an imaginary line? And how does it guide the observer's eye path? 10) When does line give "axial balance"? 11) What four directions can line indicate? 13) How can line express emotion? 14) What is a seeking line? 14) When does line form an edge and vice versa? 15) How can line form texture? 16) How can line be used to diagram future creations? 18) What is a finished drawing? (Only the artist really knows!)
- III. A sequence developed to increase student awareness and sensitivity, sharpen student manipulative skills, deepen

student knowledge of line.

1. Exploration of the definitions of the word line. Observation that it can be considered many things other than a mark on a page.
2. Lettering of student name in the size he usually writes it, with: pencil, pen, charcoal, brush and ink, twig and ink. Observations that 1) each student has writing unique unto himself, 2) that different media give the "same" lines different character.
3. Free period of time to explore line in its various media options.
4. Writing of name with both hands and feet: observation that students have more ways of using marking tools than they normally consider.
5. Student choice of a single letter of their name to enlarge approx. ten times its size to fit in a 2"x2" picture plane (line as a delineation of space). The letter is chosen by merit of its beauty and/or expressive quality.
6. Expansion of letter until it reaches and overlaps edge of picture plane. Discovery by student of "circumferential division" and its effect on picture balance.
7. Writing name large using tip of scissors (observation of incised line as a basis of relief sculpture).

8. Gluing thinly cut strips of paper -edgewise- over the incised name. Observation of line becoming enformed or three-dimensional.
9. Creation of a three-dimensional letter.
10. Repetition of line to form rhythm and direction (movement). Observation that repetition can be static and movement monotonous.
11. Manipulation of tool pressure to form shades of dark.
12. Repetition of same weight (thickness and darkness) of a line at different intervals to form shade.
13. Crossing lines over lines to form texture (cross hatching).
14. Emotion lines- horizontal, vertical, diagonal and meandering, in all media. Observation that the lines are also directional.
15. Using line to form mass. Observation and creation of eight steps of shading.
16. Homework of using line to depict form (mass). Draw an egg at night using one light source. Include the egg's cast shadow. (Observe egg shape as a basis for all art curves and the human skull shape. Also, note invisible horizon line.)
17. Line used to create perspective - one and two point, fourth dimension (tesseract), overlap, size relationships, dark and light relationships, textural relationships, etc.

18. Figure drawing by use of: scribble, gesture, and contour. Observation of the difference between cartoon, characterization, illustration, pattern, and drawing as simply line.
19. Line as used in painting. Observation of line as texture and as a means to clarify detail. Becoming sensitive to "polar and equatorial axis" lines as they relate to: balance, unity, harmony and continuity.
20. Line as used to enhance forms (kaleidoscopes, kites, masks, etc.)
21. Functional plans or diagrams made to be used as the basis for a three dimensional creation.
22. The reading and looking at the illustrations of A Dot and a Line by Norton Juster.¹⁹ Humor and line can be discussed as being valuable.
23. Review of various exercises and evaluation of them by student and instructor.

TEXTURE:

- I. Key Questions: 1) What does the word texture mean as defined?
- 2) What is the difference between seen texture and felt (touched) texture? 3) Why is texture valuable in design?
- 4) Does anything not have texture? 5) How does texture relate to any given creation? 6) Which textures are pleasing and which are less pleasing and why? Note: Much of texture is covered under the heading line.

- II. 1. Visual texture is used to form a collage. Observation that texture can form two-dimensional shapes, create interest and form areas of interest or emphasis.
2. Tactile texture used in the creation of hand sculptures or soft sculptures.
3. Rubbings (using pencil over rough surfaces, raised surfaces and incised lines or pressed surfaces) to form texture.
4. A combination of tactile and visual texture through the use of hidden objects for drawing subjects. Observation that knowledge of objects is often in the form of tactile response. Observation of the texture can relate to visual concentration of that knowledge through drawing experiences.

COLOR:

- I. Objectives: Student awareness (qualitative and quantitative of both psychological and physiological aspects of color. Students should become aware of the dramatic and lyrical (poetic) capabilities of color. Internal and external functions of color should be viewed individually and in relation to each other. The elements of color should be viewed individually and in relation to each other. These parts are: color, unity, harmony, character, warmth, coolness, organic and structural qualities, the advancing and receding feeling of particular colors, transparency and opaqueness in color and too much more to be squeezed in.
- II. Key Questions: 1) What is color? 2) What are different color theories (Prang, physiologists', chemists', psychologists',

biologists', Munsell, decorators', and others). 3) Why do different color theories exist? 4) In what ways does color affect us every day? 5) Of what importance is color to a product designer? 6) Which color combinations are: restful, inviting, harmonious, discordant, repulsive, dynamic? Why? 7) When is the idea of a color more potent than what is being created? 8) What is a neutral color and why is it considered neutral? 9) Why is a color called saturated? 10) How can a color be made dull?

III. Sequential developments for color understanding.

1. Use of the color wheel to relate warmths and cools of color.
2. Demonstration: flat and gradation wash, wet on wet technique, dry brush techniques, and the use of brush loaded with multiple colors at the same time. Demonstration is followed by the student experimenting with the various techniques.
3. Use of contrasting color to dull a color via juxtaposition, contrast, and color transparency as well as in color mixing.
4. Color memory: Matching a color swatch by mixing water color.
5. An exercise that allows the student one minute per square inch painting time.
6. Color as it relates to space and time, (homework). Students are asked to view a movie, play or a speaker on art who uses movies or slides, to find ways color is used for emphasis, and meaningful essential detail.
7. Color as it relates to space. (Done between #9 and #10 on Line.) Areas between letters are painted as they relate to already drawn values. Observation

of proportional color relationships is possible.

8. Critical analysis of color use in various works of art, based on proportional relationships. Observation of the relation between tint and shade and value in color.
9. Advertisements are viewed as having eye catchers.
10. Torn and cut paper sculpture is created such that the colors and masses relate. Observation of soft and hard colors.
11. Pastel colors used in cool and light areas, via the use of colored construction paper, tissue paper and water color washes. Observation that color that has been thinned or whitened can give the effect of being pastel.
12. Use of construction paper to form non-objective or cubistic designs which express a mood.
13. Observation of pattern on material and on the surface of sculpture.
14. Color harmony as a facet in the creation of a soft sculpture.
15. Design of a home including room interiors. Particular colors can be observed to express particular modes of living. Awareness of the color effect on structure and a sense of atmosphere can be gained.
16. Presentation of creations with color relationships in mind. Observation being concerned with the way positioning of completed creations on the wall or in a given area can cause different responses in viewers.

MASS:

- I. Objectives: Student should become aware of the difference between bas relief, alta relief, cameo, three dimensional sculpture, soft sculpture and kinetic sculpture.

Student should be able to see the likeness and difference between a functional and a non-functional creation. Packaging can be considered as a sculptural form. Awareness of tension, thrust, balance and weight as well as the function of pierced areas should be stimulated in the student.

- II. Key Questions: 1) What is sculpture? 2) What sculptural forms do we see around us every day? 3) What makes each sculptural form different from another? 4) What type of enjoyment can come from sculpture? 5) Who have been great sculptors and why? 6) What role does surface quality play in the forming of a sculpture? 7) What is the difference between shape and mass? How are they alike? 8) When is sculpture a product? 9) Of what significance is the development of moving and electronic sculpture? 10) What are the two main techniques used in creating a sculpture? 11) How can a sculpture achieve a light and airy feeling even when made from heavy metal? 12) In what way is sculpture like music?

- III. Sequence of development for sensitivity to sculptural form.
1. Exploration of the word sculpture as it is defined.
 2. Field trip exposure to as many forms of sculpture as possible. Students are then asked to draw the observed forms. This process of memory or imagination work helps bring about a real seeing of sculpture.
 3. Design of a box; and there are many ways to successfully design a box, so that it can be known as a sculpture, a container or a form that can be used as a base for a sculpture.
 4. History as seen through sculpture implementing slides or movie presentations. Seeing into the past serves as a means to encourage inspiration for and sensitivity to what is being currently created.
 5. Light and shadow as it relates to sculpture. Sculptures

are put under different lights for observation of the swallowing-up quality of shadow. Light and shadow are able to be emphasized as a means of creating spatial relationships.

6. Discussion of fountains and architecture that students have seen leads to the observation of the importance of a sculpture ecology.
7. A student choice of product is created, packaged and advertized. Commercial designs are observed as possible sculptural forms.
8. Creation of soft sculpture. Observation of what surfaces in sculpture are more enjoyable to the touch than others. Contrast of the idea of soft with sculpture poses a paradox in some ways.
9. Mobiles and stables, neon art and machine art are viewed through pictures and slides (unless original works are available). Technology and sculpture are observed as having contemporary art relationships.
10. Wood blocks and linoleum blocks or vegetable carvings are related to both printmaking and carving. Observation of additive and carved sculptural techniques as related to a flat design is important here.
11. Paper, additive, sculpture is related to carved sculpture through the creation of expressive forms. Observation of the different results of different techniques is sought after.
12. Architectural design and interior design are covered in creation of a model of a student's dream house. Form and function are able to be observed as inter-related elements in a sculptured creation. Line, shape, color, mass, texture, rhythm and movement, time, and space all relate to the student's need and knowledge. It is difficult to make exacting or general

observation in this assignment. Complexity of elements as well as intensely personal views of students add to the richness of this exercise.

13. Sculpture as related to music. A sculpture is put on a turntable and at the same time a record is played. The observation that neither all of the piece of music nor all of the three dimensional sculpture can be felt in all respects without the passage of time and some kind of movement makes a good analogy. With such an observation the aspect of time gives a possibility of original conceptions by the student in the area of music and sculpture. At this point it would be possible to relate movement quite well with the movement of the eye as it moves over surfaces which are not predominantly three dimensional.

CONCLUSION:

Student allowables: Self motivation, observation, memory and imagination, constructive criticism, appreciation of art and its history, and student and instructor working together. Though often several of the allowables are at work simultaneously it takes organization of the instructional time to insure sequential development. Well organized students can become aware of essential detail as possible sources of inspiration, theory or advancement. Students should be allowed deep involvement with the materials of design as this can normally produce a greater understanding and awareness in the student. Through awareness and understanding, creativity gains in its own discipline and the student has greater flexibility in his approach to most problems.

Students should be given deserved praise for that which is strong and well formed. Students should be respected for their ability to discern weakness in particular designs. A student should be encouraged to be himself, a self that can change and develop.

Design should aid the student in the evaluation of his own creativity in relationship to the world at large, or our highly technological society. A movie is a movie; a product is a product; and a work of art is a work of art, yet all relate to each other through design elements.

Even though emphasis on a single element of design is stressed, the element is always presented within the total context of design. Design must be known, loved, suffered with, carried through, explored and possessed in as many ways as possible before it becomes a part of a student's way of life. A course in design should offer the opportunity for the phenomena of awareness, appreciation, application and inculcation of the continuum of learning.

FOOTNOTES:

¹Joseph Conrad, The Nigger of the Narcissus (New York, 1960), p. 27.

²As a Graduate Teaching Assistant at Montana State University, I have had the opportunity to conduct six quarters of design for non-art majors. The functionality of the given definition is based on student comprehension of design during those six quarters.

³James T. Saby, Georges Rouault (New York, 1947), p. 15.

⁴Students of Design 114, Spring, 1971.

⁵Maurice de Saumarez, Basic Design: The Dynamics of Visual Form (London, 1964), pp. 11-14.

⁶Susanne K. Langer, Feeling and Form, "Everything actual must be transformed by imagination into something purely experiential; that is the principle of poesis." (New York 1953), p. 258.

⁷M.S.U. Bulletin, Vol. XXV (Montana 1970-71), p. 191.

⁸Jane E. Beitler and Bill Lockhart, Design for You (New York, 1964), pp. 191-201.

⁹Marjorie Elliot Bevin, Design Through Discovery (New York, 1970), pp. 16-19, 22-73.

¹⁰Ibid.

¹¹M. Rose Collins and Olive L. Riley, Art Appreciation for Junior and Senior High Schools (New York, 1931), p. 9.

¹²Lillian Garrett, Visual Design: A Problem Solving Approach (New York, 1967), pp. 11-13.

¹³Edmund B. Feldman, Becoming Human Through Art (New Jersey, 1970), p. 144.

¹⁴Victor Lowenfeld and W. Lambert Brittain, Creative and Mental Growth (New York, 1970), pp. x-xiii.

¹⁵Adamson E. Hoebel, Anthropology: The Style of Man, 3rd. edition, "Art is any human activity or product (artifact) that emphasizes form beyond all requirements except those of a distinctive pleasure that the manufacture and contemplation of form can give you. By form is meant a perceptible relation of parts to a whole. The distinctive pleasure it gives is here called 'aesthetic experience.'" (New York, 1966), p. 287.

¹⁶Norman Potter, What is a Designer: Education and Practice. A Guide for Students and Teachers (London, 1963).

¹⁷David Manzella, Educationalists and the Evisceration of the Visual Arts (Pennsylvania, 1963).

¹⁸Nikolas Pevsner, Pioneers of Modern Design (New York, 1968).

¹⁹Norton Juster, The Dot and the Line, A Romance in Lower Mathematics (New York, 1963).

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