



Shaping a Personal Environment

Curriculum Unit 83.01.11
by Robert F. Evans

The course I teach is called Drafting and is introductory in nature offered to all students as an elective subject in grades 9-12. The student may or may not have had any previous drafting experience. The year long course is divided into four marking periods. Each unit during the year is designed to improve basic drafting and learning skills. Basic drafting techniques require the proper use of tools and symbolic knowledge. Learning skills require reading, writing, and arithmetic to be integrated as building blocks and objectives of the units.

It is my objective to show how architecture could be used as a thread connecting all of these skills and allowing the student to express goals in a visual form.

I found that the more I tried to isolate the topic architecture as a unit I found more ways to use it in each unit during the year.

Words are an important part of the communication process and necessary for language development. The first unit I teach is concerned with graphic design. Usually a student feels threatened in learning to handle and draw with unfamiliar tools when first beginning a drafting course. When the design problem is built around something as familiar as words it is easier to hold and stimulate interest.

The student develops a familiarity with basic drafting procedures and becomes perceptually functioned with flat and perspective design. A very important objective is to stimulate an interest in words and their meanings while enhancing these skills.

In order to enable the student to design an environment one should have a working vocabulary of design terminology. The term architecture gives infinite possibilities for definition depending on the school of thought one is introduced to.

Architecture has many definitions but very little meaning either in or beyond the classroom for the average student.

I propose that experience at a personal level can be an effective means of bringing the word architecture into the real world of the student.

Architecture by definition could be considered an art form with buildings seen as monumental sculpture. Architecture is also a science requiring imagination to develop design and to construct the personal and civil

space in which we find ourselves a part. Architecture is sometimes defined in terms of the character style or period of a building. At other times it might be seen as a particular form with a specialized function. Often architecture is thought to be esoteric in nature and disciplined by need. Sometimes we can understand space simply as in ordinary seashells, beehives, or warrens.

The quest for a definition of architecture should involve a search of personal experience which seems to connect any or all of its aspects in a manner which the student can identify with.

Architecture could be simply defined as living space. The first step in understanding is awareness. When the student begins to see all space around as architecture, understanding of style, proportion, color, and imagination become understandable concepts which can be dealt with.

These concepts are necessary to handle design problems and exercise critical assessment in forming value systems to judge the results of efforts to design an environment by the student.

The following is a suggested list of words to use in developing design literacy.

WORDS

| | | |
|------------|-------------|-------------|
| Line | Balance | Creativity |
| Art | Texture | Integrity |
| Awareness | Style | Beauty |
| Education | Perspective | Color |
| Critical | Ideation | Design |
| Assessment | Projection | Accuracy |
| Form | Bionic | Originality |
| Function | Change | Imagination |
| Proportion | Valves | Neatness |
| Rhythm | Prejudice | Structure |

The following is a lesson plan to help define architecture.

LESSON PLAN

Topic:

Architecture

Objective:

Student should be able to:

1. Define Architecture
2. Develop an appreciation of the various types of architectural design its function and durability.
3. Describe a period or style of space which appeals most to the student.

4. Relate terms such as proportion, style, etc. to architecture.

Introduction:

Assign each student the task of defining architecture in their own words as a homework assignment.

Presentation:

Classroom discussion would be opened with student views of the researched meanings. This would be followed by lecture showing examples of important developmental points in the history of shelter. Architecture would be further defined in terms of its artistic and scientific aspects during this time.

Student Feedback:

Students should then discuss a particular example of architecture in terms of its relevance to their own lives. An immediate example would be to discuss the classroom in terms of color, texture, size, shape, structure, style, etc.

Assignment:

Students should research a period or style of architecture and be able to discuss positive and negative feelings about it.

Evaluation:

Students should be able to define and discuss architecture, and tell how and why it effects their daily lives.

The concept of architecture is thus introduced and connected with other design ideas early and gives the student the chance to see how they can aid in the design process.

It is the objective of my second teaching unit to strengthen math skills and stimulate interest in a more scientific approach to drawing in contrast to the arbitrary and familiar graphic shapes of the first.

I therefore teach the students how to construct geometric shapes using instruments. The student is made familiar with the uses of these shapes in everyday life and design and can then appreciate and recognize their use in building design. These shapes can be seen in windows, doors, furniture graphics, tiles, wallpaper, rugs and all objects which will eventually be used by the student in the design of a personal landscape.

The objectives of my third unit are to introduce the student to the three dimensional aspect of design through pattern development. Now abstract geometrical shapes can occupy space and the student can learn about another important architectural skill: model making. By being able to see space in three dimensions a model helps the student to further conceptualize space. This third unit is a four week unit and is followed by four weeks of career and related information designed to help establish goals in relation to life style. The type of personal space we live in is directly related to career goals, lifestyle, income, interests, etc. and therefore a criterion in helping to design space. This unit also provides career information about architecture as a career.

During the next students are made familiar with blueprint reading, working drawings and concepts of orthographic presentation and dimensioning. This lasts eight weeks and shows the student how design can be used to create new objects for a space such as furniture.

The last unit of the year acts as a point of synthesis for the student. Here knowledge from all previous units is required to design a personal space. Architecture has been defined and introduced into each unit. The objective of this unit is to show how the student can control and manipulate space.

I begin by showing the student how their own body can be used as a measuring tool and reinforce the concept of proportion. The size of the body can show the student how to measure space around and with movement can demonstrate space which is comfortable or uncomfortable. The class room can be used for demonstration purposes. Floor tiles often measure one square foot. Students can compose foot size to the square and obtain a relatively easy way to measure a room. Various areas of the room could be marked off with tape on the floor to define specific sizes or shapes to be measured. This taping idea could be carried further to show complex geometric shapes as living space. For example move desks aside and create in the middle of the classroom the ideal space for a specific purpose is kitchen, bath, living room, trailer, boat, space shuttle, diner, etc. The student should measure various objects necessary to the space to reinforce volume concepts. Once the student can measure effectively the next step comes as homework.

The student is given graph paper scaled to the proportion of $V = 1''$, and asked to measure a room at home. The information for height length and width of the room is recorded as are all objects within the room. The students sketches freehand on the graph paper the floor plan and elevations of the room locating all openings and furniture locations. Once all information and sketching is complete the student must then draw the plans and elevations to scale using the proper instruments and architectural symbols. The student is now familiar with basic architectural drafting skills and can go on to the next step.

Fantasy, the things dreams are made of, or reality, offers an important choice for the student. Either way the student is required to create a new design for the existing room or entirely new space. For this final presentation the student should show knowledge of one and two point perspective, color, and orthographic drawing. The student can use this opportunity to set goals toward achieving the end design. The assignment becomes a personal experience which can show the student how much of living space can be designed, organized, controlled, planned and how achieved.

By beginning to define concepts of space as architecture and architecture as living space the student can become aware of places and possibilities of places, places which touch and places of the mind. In effect by the process of defining, the student can begin to define self images. The idea of self image and working with each individuals idea of self by getting the student to express that self through the process of design is really what shaping a personal environment is all about. Our personal space reflects many aspects of personality, interests, needs, expectations, comfort, color, texture and size concepts or beliefs. Therefore the space be closely related to individual desires. This gives wide range to how the design process can be carried out by the student. By working through the design the student should achieve a better self image and raised expectations.

A second objective is to show that this design can function in a number of ways. For instance if the space chosen happens to exist in the students home graphics designed could become wall murals. Furniture designed could be built in woodshop or at home. This can result in improvement of student-parent relationship when something designed by the student is further supported in the home to reinforce positive concepts of self. Other students can approach the design as a blueprint for future goals. Students can decide when and

where the space will be, how much it will cost, and what it would take to support such a space. Career goals and expectations can be raised in a very real way by this approach. Others may treat the design as an isolated event as an artwork itself. Some may chose a three dimensional sculptural approach in model form rather than as a drawing. The limits of the students will help to make a choice. Those who have command of advanced conceptual imagery and imagination will have more options to choose from. Students may feel more comfortable however dealing with the familiar. I also provide many kinds of existing spaces which can be traced and arranged at the simplest level to encourage performance according to skill.

Grading is also left to the student and is based upon established criterion practiced throughout the year. Essentially the student performs a self analysis and arrives at a grade which reflects how much the student feels they have learned as a result of the experience.

The student is encouraged to use as many drafting and design skills in the design as possible.

Fantasy is the free play of imagination and this becomes a real goal in asking a student to communicate via drafting images of a self. Flexibility in allowing this to happen with the student will encourage imaginative solutions.

Space design can be a part of the students experience in school if the student chooses to design a space within the school. This can be done as a class project, a competition, or as an individualized project. School bulletin boards blank walls, corridors, offices etc. can be used as design problems. The environment of the classroom can become the learning experience when students have a role in its design and use.

History can be introduced as a part of the fantasy when asked to design a room from another time or place. A student could introduce historical references into the design by various methods including ornament, furniture, artifacts, etc.

Fantasy can look forward to the future where the problem may be on a space shuttle, a floating moon base, or a research vessel of some kind.

The room design shows the student the connection between fantasy and the attainment of real goals and gives free play of imagination towards achievement.

I have shown how architecture can be related to a number of different areas of drafting and how it can be utilized to stimulate interest in drafting both as a vocation and a hobby. When the student completes a problem such as this it is something which can be used throughout life to help one create and organize personal space. These skills can be put to use immediately in the home, or school as while helping to establish goal setting behavior.

LESSON PLAN

Topic:

Designing a Personal Space.

Objectives:

Student should be able to:

1. Draw floor plans and elevations.
2. Draw one and two point interior perspectives.
3. Design and place furniture.

Introduction:

Students are asked to measure and sketch freehand on graph paper a room from their own home.

Presentation:

Discuss ways in which the design of a room can be changed or an interior space designed for specific uses. Discuss how life style career and living space relate.

Student Feedback:

Students to discuss goals in designing space.

Assignment:

Students to draw to scale plans, elevations, sections, and perspectives of proposed space.

Evaluation:

Students critical analysis of work and feedback on how much was learned as a result of experience.

LESSON PLAN

Topic:

Careers in Architecture.

Objectives:

Student should be able to:

1. Give an oral presentation on career of own choice.

Introduction:

Students are asked to observe people working and note positive and negative aspects of various jobs.

Presentation:

Curriculum Unit 83.01.11

Discuss architecture as a career and cover the following'

1. Job Title
2. Duties and Responsibilities
3. Personal Qualifications
4. Education and Training
5. Salary
6. Outlook for Future
7. Advantages and Disadvantages

Student Feedback:

Students to discuss observations of people working and relate to above seven points.

Assignment:

Student to research a career of interest and give an oral presentation.

Evaluation:

Class to grade student on effectiveness of presentation.

LESSON PLAN

Topic:

Geometry in Architecture

Objectives:

Student should be able to:

1. Identify geometric shapes in architecture.
2. Use geometric designs to design a wall surface.

Introduction:

Students are to bring in to class a geometric shape found in products around the house.

Presentation:

Discuss everyday uses of geometry in design. Show how basic geometric shapes are used as elements of design in structure, plan and elevations of building.

Student Feedback:

Students to describe geometric shapes used as elements of design in the classroom.

Assignment:

Given a specific area of wall space design a geometric wall mural. This can be done to scale first on graph paper as a freehand sketch, three version required. After choosing one the student is to enlarge design using drafting tools.

Evaluation:

Students to grade work on such points as originality, neatness, accuracy, color, proportion, etc.

Books Recommended for Use With Students

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