

**FIRST CLASS / FIRST PROJECT:
TO RAISE INQUIRY ABOUT DESIGN THROUGH MAKING**

Stephen Temple
Associate Professor of Architecture and Design
Department of Architecture
University of Texas San Antonio
501 W Durango
San Antonio TX 79207 USA
(210) 458-3023
stemple@utsa.edu

Abstract

Introduction: Researchers at Kansas State University analyzed course evaluations and found that 85% of students decide about a class in its first two hours, making crucial that the first design class captivate students' imaginative inquiry. This paper proposes a hands-on in-class design project and review as a substantive, stimulating first class / first project following the notion that, "Learning begins at the fingertips." Making is serious play that simultaneously engages abstract conceptualization as our embodied consciousness is involved with a task at hand. Making renders a total embrace of sensual engagement, haptic engagement, mental engagement, and imaginary engagement as decisions are made as a measure of the resistance of materials. Making is activated thinking.

Materials: project: given a stone half the size of your fist and one meter of tie-wire, design and construct an orderly support for the stone one fist from the desk surface. Use no tools. Ten minutes. Follow-up project is to design and make a "place" for a stone substituting paper for wire retaining the "concept" of the orderly support.

Methods: Review of projects through cooperative inquiry, is shaped as critical discourse that flushes out forms of observation (comparison, grouping, differences, etc.) and forms of process, both invented and discovered, in the context of conceptions and preconceptions (heuristics, exploration, imaging, iterations, etc.). Students do most of the talking, from the prompt, "how shall we talk about these design projects?"

Results: Opening dialog about design is critical to stimulating student inquiry about design from the very first moment. The first project raises questions from the personal immediacy of design decision-making. These inquiries are a seed planted in the potential of each student's design agenda.

Conclusions: This project precisely opens and prefigures issues of design as the content of the individual design inquiry that is the body of the course. Simultaneous concrete engagement and critical inquiry, making is design in immediacy. Raising dialog between thinking and doing breaks a tendency to preconception and acts of making are a transformative agent that empowers more abstract design inquiry.

Key words: first project, making, materials, design inquiry, creativity

FIRST CLASS / FIRST PROJECT: TO RAISE INQUIRY ABOUT DESIGN THROUGH MAKING

Introduction - The First Day of Studio is an Opportunity to Design

Researchers at Kansas State University have analyzed course evaluations and course structures and found that 85% of students decide about a class in its first two hours, making it extremely important that the first design class immediately captivates students' imaginative inquiry and sets in place curiosities that can sustain design engagement. Designing, as a creative act, is an emergent, developmental interaction between exploration, discovery, decision making, and the search for intentions, during which there occurs a simultaneous transformation of the self. The first design course is a journey and the first day is its beginning, and it should arrive as meaningfully as its potential to be life changing and life affirming. In this way it is not about the objects of design but the processes of design and one's engagement in them. Much is at stake.

One of the most difficult tasks in teaching design to new students is developing in them an awareness of the processes necessary to the design act and to value these processes as both essential and present in all the built environment and its objects. Almost all of today's students enter beginning design courses out of touch with the fact that it is by way of design processes that objects are brought into the world and a great many hold a preconception that designing involves a kind of grand inspiration with little or no

developmental stages. Entering design students also possess little feeling for materials, material qualities, or the constructedness of things. Having a design project on the first day begins an initial design course with designing itself. Thus a door can be opened. My claim is that immediate creative inquiry can transgress the aforementioned experiential boundaries and preconceptions and incubate inquisitiveness for design.

This essay proposes a hands-on in-class design project and its immediate critical review as a substantive and stimulating first project in the first class in lieu of any other form of exercise, certainly in substitution of reading the syllabus. Following the notion that, “Learning begins at the fingertips,” the in-class project is produced in full-scale, in direct contact with actual (non-representational) materials. Making is serious play that simultaneously engages abstract conceptualization as our embodied consciousness is involved with a task at hand. Making renders a total embrace of sensual engagement, haptic engagement, mental engagement, and imaginary engagement as decisions are made as a measure of the resistance of materials. Making is activated thinking.¹ Making engages creative thinking as novel processes emerge from the divide between material and mental exploratory possibility.² Direct experience is an enactment and transformation of the brain and thereby new ways of thinking are formed.³ Making renders a connection of the self to the world through heuristic processes of material realization and the emergence of creative intentions toward the work of design.⁴ The intention of the first project is to reach students as they connect to the world through materially realizing design intentions in first hand exploration and through design discourse. In reaching them this way they have a core experience of design and the methods of the entire course from which they can begin to develop and build their own basis for design decision-making and methodologies.

Project Description:

In the first class period students are put to task directly on the design project. The syllabus is handed out at the end of class and is discussed in the second-class period. The project proceeds by giving each student a stone about half the size of the fist and a length of reinforcing bar tie wire about one meter long. Students are then told to “design and construct an orderly support for the stone one fist from the desk surface.” They cannot use tools. Incidentally, tie

wire is coated with a thin film of oil, so students can experience the residue of making directly on their hands - many of them thought that designers do not get dirty so a preconceived hindrance to accessing design process is immediately dashed. There is a ten-minute time frame for completion of the project, although most students announce they are complete within five or six minutes. (See Figure 1) The method of design education employed here is to design/make and then discuss, and then design/make again, following a logic of developmental learning theory - to experience and then reflect on that experience.⁵ At the completion of ten minutes time, students are instructed to place all their projects on a single tabletop and to gather around for a discussion.



Photographs by Stephen Temple

Figure 1 – First Day Design Project: “Orderly support for a rock”

Methodology

Discussion of projects students have designed/made is a typical pedagogical structure of the studio course, that is, experience followed by critical reflection on experience. Cooperative inquiry through discussion is critical to development of a studio culture. Students may have shared techniques or even stolen each other’s ideas during the design and making of their work but cooperative critical discourse will liquefy these indulgences into a solution of new inquiries. Discussion of this project begins by simply asking the students their opinion of the objects on the table. “How shall we talk about these design projects?” The instructional methodology is to get students to raise issues rather than instructors telling what to think or look for. A conversation, a discourse about design, may then ensue from a direction chosen by students. This has the effect of personalizing the discourse and allows students to be free to use their own vocabulary rather than attempt erudite concepts.

Since some 20 projects are collected on the tabletop, students can visually scan all of the projects. This is a ploy on the part of the instructor to allow comparison of other projects to their own but rarely is there a first comment recognizing this comparison. Rather, the first comments typically spring from the attractiveness or captivating qualities of one or two of the works in relation to its lacking in the others as a whole. This is often an appreciation of creative novelty - expressively curved wire or unexpected shapes or associations with known forms like animals. This behavior is playful adaptation to the uncertainty they feel in the lack of clear direction for discussion, so they attempt humor to break the ice, so to speak. They will also readily refer to what they “like” or prefer on a personal level. Personal preference is something of a “negative” category, in that it usually leads very broad categories (“I like circles”) and to little substantive discussion. But it is important to have this discourse with new students of design for two reasons, both of which lead to greater substance. It allows for the students to feel good about what they have done so they are anxious for more and are not disinterested. Secondly it allows the issues of personal taste and the appreciation of the superficial to be purged amiably from deeper inquiry.

A more substantive discussion of the design projects typically follows from a student comments that points out similarities between two or more projects. A comparative analysis easily flows into the raising of categories of criteria to judge the differences between the two designs. Categories that emerge from the ensuing discussion flush out primary decisions that had to be made just to make the project. How many alternative ways are there to combine a rock and a length of wire? If the rock is placed on top of a wire shape then this is the making of a “base,” or pedestal for the object. If the rock has wire wrapped around it then the construction becomes more integrated. The rock can be hung from a cradle extending above the rock and back to the table surface. Some have constructed a foil to the mass and weight of the rock in the form of an enclosed shape in proximity to the rock. There are countless variations but only a few alternatives, which is a lesson that is pointed out. Additionally, comparison can be used to describe nuances that cause one variation to be more interesting or raise more questions than another.

The rare student will hang the rock off the edge of the table. What can be brought to light here is a rethinking of the nature of the design problem in a form of problem-seeking. While dispensing with the conventional on the table solution a project hanging from the edge seeks to redescribe the issues being addressed and redefine issues like gravity and table surface. Hanging is

a direct reference to gravity. A table is more than just a surface. In fact, a surface is an infinite two-dimensional surface until its edge is recognized. And the wire form necessary to hang the rock at the edge either makes a gesture of grabbing and thereby specifying the thickness of the edge or it performs a miracle of balance in hanging precariously.

It is at this point that the source of their design ideas comes into question in the form of the survey, “How many of you designed your orderly support by first having an image in your head?” Typically about 70% of the class will raise their hands. Then it is asked, “How many did it another way?” so as not to ask a leading question. Most of the remaining group will talk about playing with the wire, exploring its qualities to see what it can do while the others will talk about wrapping the wire around the rock in an effort to discover a relationship between the two materials. A lively debate can follow about exploration versus visualization versus conceptualization as a reasonable and inspiring beginning of design activities.

The issue of workmanship is usually raised after issues of form are exhausted and is typically derived from a project wishing to emulate a solid geometry. A cube or prism or cylinder takes shape but does not “look right,” due to some distortion in the form or kinkiness in the wire or lack of precision of a corner. The discussion of the category of workmanship can usually be directed to the realization of the design intentions in the form of the lack of precision in form or material, ala David Pye’s discourse. In other projects, the materials are being forced by an idea into a form for which the material is unsuitable. In still others, the detailed resolution of the materials is lacking and refinement of the means of construction is necessary or the student is urged to again explore the potential qualities of the materials.

Results:

If design is the raising of questions, to answer questions with more questions, especially about design activities themselves, seems precisely the first lessons needed. Critical discussion is the opening of dialog about design and it is critical to stimulating inquiry about design from the very first day. The first project on the first day raises questions from the personal immediacy of one’s own design decision making as a seed planted in the potential of one’s own design agenda. Additionally, the seeking of greater inquiry, even answers to inquiries, can drive personal inquiry as well as how one’s own basic desires might fit into design studio culture as well as the broader context of the culture of design.

The first project introduces many fundamental ideas both through doing the project and in reflecting on it through discussion. Design is a process, whether heuristic or conceptual or emergent from exploration or other means. It is revealed that design creativity is a form of decision-making and not just a grand or momentary inspiration for which one must wait. Introduced is the notion that design is an iterative process, developmental and emergent, and at its outset it involves uncertainty and ambiguity of direction. Therefore by necessity it involves vision. If design can be defined as process what then is the product of design? And what are the nature of design ideas - conception vs. discovery vs. developing or finding ideas as they emerge. Design is introduced as a way of thinking. Clearly the juxtaposition of the divergent ideas and forms of this simple rock and wire project illustrates that a way of thinking is embedded in a designer and must be drawn out and developed and clarified in material form. And it can be just as easily revealed or obscured by design decisions. Design raises questions. Design is a form of inquiry about things that are very basic and also about concepts that are uniquely human and spiritual in nature. After all, what is a rock?

Design is also a form of creative production and this first project can point out many of issues necessary to creativity. Many students have difficulties coping with the freedoms of creativity, though it is not likely that students with these propensities can be determined from one design experience. The creative path of design necessarily involves our perceptions and experiences in the world and is manifest though our interest and curiosity. Creative design must be incubated through convergent thinking and problem seeking to develop a richness of impressions and fascination with possibilities. Creation also involves divergent thinking and is excited by openness and tolerance for uncertainty and taking chances. A creative person cannot be afraid to be wrong and so design leads to being prepared to be wrong. Design needs to be verified in comparison to an understanding of norms in order for it to contain the novelty necessary to creative projects. Design must be communicated, with its process being made available. A designer must develop the ability to risk being laughed at and must anticipate it in order to control it. And finally a design must survive evaluation for effectiveness & relevance, for design, in its audaciousness, connects us to the world of objects and to the world of others.⁶

Conclusion

The “Orderly Support for a Rock” project is delivered in the initial class to precisely open and prefigure issues of design as the content of the

individual design inquiry that is the body of the course. The initial design class becomes an experiential microcosm of design activities and of the structure of design studio methodology. Making is design in immediacy. Simultaneously concrete engagement and critical inquiry, making raises iterative dialog between thinking and doing and thus breaks tendencies to preconception that shortchange design processes. More importantly, acts of making are a transformative agent that empowers the more abstract design inquiry that will be necessary as one moves through design education. Finally, if learning design engages emergent creative activities that encourage student self-development as a search for one's own intentions toward design, then making something as the first project (and the entire content of the first course) begins this process in intimate connection of what is immediately, and literally, in the hands of the student him/her self.

Notes

1. Temple, Stephen. *Design through Making: a Pedagogy for Beginning Architectural Design*. Dubuque, Iowa: Kendall Hunt Publishing Company. 2007
2. Sawyer, R. Keith, Vera John-Steiner, Seana Moran, Robert J. Sternberg, David Henry Feldman, Howard Gardner, Jeanne Nakamura, Mihaly Csikszentmihalyi. *Creativity and Development (Counterpoints: Cognition, Memory, and Language)*. Oxford University Press. 2003.
3. Caine, R. N. and Caine, G. *Unleashing the Power of Perceptual Change: The Potential of Brain-Based Teaching*. Alexandria, VA: Association for Supervision and Curriculum Development. 1997.
4. Sawyer, R Keith, et al. 2003
5. The follow-up project is to design and make another wire/stone support, followed by a third "place" for a stone substituting paper for wire while retaining the design "concept" of the orderly support.
6. For elaboration see, Cropley, A.J. "Fostering Creativity in the Classroom: General Principles." *Creativity and Development*. Sawyer, R. Keith, Vera John-Steiner, Seana Moran, Robert J. Sternberg, David

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