
Original Paper

A Phenomenological Approach to Beginning Design Education

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Abstract

This paper describes a beginning design studio pedagogy structured by a philosophically phenomenological approach focused on embodied interaction in initial design learning experiences. Students enter beginning design education with little experience with the material realization of creative activities or how those creative activities are transformed by more abstract investigations. Following hermeneutic phenomenological methods of empirical exploration and reflective analysis, a beginning design studio pedagogy was formed to build sensitivities for the processes and qualities of material experience as a context of abstract thinking. This paper will explicate the philosophical and developmental theories that inform the pedagogical structure and sequence of material engagement projects. Drawing upon the learning structure inherent to hermeneutic phenomenological methods, a beginning design curriculum was constructed to engage in direct material explorations, then reflectively conceptualize ideational structures from this experience in discourse with others as a means of transforming earlier iterations. Multiple iterations form cyclical processes that enable development of creative decision-making processes as design students begin to recognize some modes within the cycle as more valid for their own design activities. Focusing on embodiment in the manner of this design studio developed relationships between experience and thought as an initial step toward self-direction of design thinking. In doing so, students achieved an increased awareness of possibilities for embodied engagement and self-initiation of criteria for decision-making by raising questions for themselves, enabling students to initiate their own self-development as designers.

Introduction

Developing sensitivities for the processes and qualities of material experience within a context of abstract reflection on that experience is vital first step toward self-direction of design thinking. Direct experience is in large part the content of architectural encounters, in that actual buildings form the embodied experiential situation of everyday life. However, beginning design students typically possess little experiential basis for how experiences can be transformed by abstract thinking or how those abstractions effect the material realization of their creative activities. Amid the many misconceptions held by beginning students that interfere with developing a working relationship between material and abstract processes is a mis-construal of their own embodiment in the world primarily as mental activity, a perspective that also derails their own self-development as designers. Our body is not a mere vessel in which a mind navigates itself in the world. A human being is an embodied consciousness, and as such, is given the world as result of the active sentience of being within that world.

The article presents a beginning design pedagogy structured to be consistent with the philosophical origins of a phenomenological philosophy that situates embodiment as primary to learning design as a correlation with the experience of the built environment. This contrasts with present-day design pedagogies, which favor methodologies that downplay embodiment in favor of teaching through abstract means that intend only cognitive intellectualization. The premise of employing phenomenological methods is that learning design by purposefully engaging embodiment through acts of making internalizes knowledge through direct experience as a ground for the abstractions encountered in later curricular design learning experiences. It follows that a pedagogy of design learning that abstractly engages design inquiries consistently with embodied experience would do so as a foundational assumption about the relation of people to buildings.

This pedagogy described in this article employs direct experience in learning design utilizing

hermeneutic phenomenological methods of empirical exploration and reflective analysis to build sensitivities for the processes and qualities of material experience as a context for more abstract design thinking. This structure of pedagogy enables greater responsiveness to student growth and development by locating encounters with abstraction in early design experiences as a threshold of learning. Hermeneutic phenomenological methods engage students in creative decision-making through direct material experience followed by reflective analytic discourse as an iterative transformational operation, giving greater clarity to the use of abstraction in design activities. A project sequence was developed in correlation with basic disciplinary concerns by first engaging in direct material explorations, followed by reflective conceptualization of ideational structures based on this experience. Through direct engagement in project work itself, students learned to seek abstract concepts from an embodied perspective of the simultaneity of human experience and physical materiality. Cycling iterations of these processes enabled development of creative decision-making processes as design students come to recognize particular modes within the cycle as more productive or beneficial to their own design activities. This enabled higher-level awareness of their own propensities for engagement and the raising of questions for themselves, and a realization of the self-initiation their own development as designers. The instructor's role shifted to that of a responsive partner in learning, enabling students to quickly realize that being independent in their decision making is critical to creative development. The following text explains the learning theories that informed the project sequence.

A Model of Design Pedagogy within Embodied Learning

Phenomenological hermeneutic methods aim to articulate the reflective character of embodied experience as it manifests in language and other forms of creativity. Hermeneutic phenomenological research is conducted through an empirical collecting of experiences and reflective analysis of their meanings. (Dibley, *et al* 2020) The method utilizes a descriptive awareness of personal experiences, dialog and critique, and close observation through phenomenological description. Situating hermeneutics in design studio education enables engagement in the art and methodology of interpretation of ideas amid a developing understanding of the validity of the ideas. Hermeneutics helps to reveal the prior knowledge a student has that then orients the student toward realizing a search for ideas of validity and depth amid dialogue about a subject matter. Phenomenological hermeneutics typically starts with curiosity about what it is like for a person to have a particular experience followed by reflective dialog about that experience. The intent is to pursue something from a truly reflective awareness, enabling the full complexity of the task at hand to be taken into consideration – not just the “necessity of the moment,” convenience, preconceptions, whimsy, or other less considered rationale. Hermeneutic exploration implies a student is engaged in a search for something, yielding inquires that be revealed in the context of design activities.

Through our embodiment, we live in the world concretely, and architectural design inevitably must recognize this. As each new connection is made to the concrete physicality of the world, mental representations of that experience are constructed. Each new contact becomes a test of those representations against each successive contact, literally restructuring our nervous system in association with concrete experience. However, as the act of abstracting is movement away from concrete experience only valid abstract representations retain reference to its concrete origin. Similarly, as students learn, basic specific models, or ways of learning, become formed that help determine the manner in which they will continue to learn. (Leamnson 1999)

In initial design learning experiences, the concreteness of things, as an actor in the interactivity between body and mind, can be used pedagogically to enable its characterization as a complimentary structure for acquiring and acting on knowledge. (Woolfolk 2000) It is the basic premise of developmental theory that learners actively and purposefully create their own structures for knowledge as they seek to make sense of the world from their own experiences. Within a developmental structure, one act of learning is built upon another as evolving mind/body/environment interactions, analogous to a mapping of our nervous network onto our activities and onto the world itself. (Piaget 1983) Within experiential learning models, mental concepts are derived from and continuously modified in the transformation of experience. An experiential learning model cycles through four modes of learning - concrete experience (making), reflective observation (thinking), abstract conceptualization (abstracting), and active experimentation (reflecting) - each a transformation of the others. Concrete learning happens in immediate engagement,

trial and error manipulation, and discovery, and as such, becomes the subject matter for reflective observation and judgment. Abstract learning involves cognitive mechanisms utilizing representational symbols of what has been directly engaged within acts of synthesis, conceptualization, and actively experimenting. Experiential learning is a continuous cycle of engagement that readily correlates with iterative design processes. (Kolb 1984)

Modeling these processes for design pedagogy through phenomenological hermeneutics helps clarify for beginning students an operational structure for concrete (experiential) and abstract (mental) learning processes. Concrete learning activities like making things immerse students in the "doing" of tasks in material form and carrying them out with intention. Abstract conceptualization is the noticing and interpreting of events and relationships within reflective observation of the concrete experiences. Reflective skills involve observing, attending, noticing differences, and communicating analytic judgments, while concrete engagement involves putting into play predictions about what is immediately likely to happen next or what actions might refine the way a task is carried out, especially in design education. (Schön 1983) Following a hermeneutic structure, a beginning design studio pedagogy was constructed to first engage students directly, then reflect on that engagement, then abstractly analyze it, then more purposely act on it more conceptually. Interactive cycling of these concrete and abstract modes form basic complimentary stages of learning common to other basic learning relationships in the manner of, 'thinking and doing,' 'thought and action,' 'mind and hand,' and in design, 'materials and intentions,' as a means of developing higher-level awareness.

Making and Reflecting to Develop Design Learning

In the initial foundation design studio course of the Architecture program in which I teach, initial design learning experiences employ direct material engagement in projects about 'basic elements and principles of design' structured from the two-dimensional to the three-dimensional to realize basic operative relationships between abstract and concrete processes. All design projects in this course are completed in one-to-one scale in material form, involving drawing only as a form of reflection that can transform thought. Projects are structured into a sequence where each project transforms into the next, forming a continuity from the scale of the hand at two dimensions to a final built project large enough to be occupied. Following a hermeneutic model, the learning environment is structured by cycles of making and thinking that necessitate reflection on the experience of making to re-inform the direct experience and abstract conceptualizing. This incorporation of reflective activity as part of the design process is consistent with that put forward by Donald Schön. (Schön 1983) Because of the tangibility of concrete experience, making things brings forward the realization that learning design necessitates reliance on yourself for the learning gained and that teaching oneself occurs only through concerted effort, consistent reflection, substantive on-going inquiries, while asking questions in discourse with others in the course. (Stewart 2012)

Making is a critical first learning encounter as it engages the full potential of human experience in relation to focused actions. Making requires direct reckoning with materials and construction processes in the working out of ideas through discursive reflection on the things made as they are made. Making immerses the student in concrete experience through direct experiential discovery of a material's workable properties in simultaneous relation to design intentions and the tools used. Making necessitates employment of trial-and-error investigations and reflective observation as an on-going critical dialogue between self and object. Responsibility to the object being made enables beginning design students to begin to sort out for themselves the significance of various aspects and scales of conceptual thinking within design processes that intend concrete realization. Conceptualizing and experimenting are implicit in the moment-to-moment interaction with materials as self-discernment of creative discovery leads to discoveries that then give rise to new perspectives with new combinations. (Bruner 1962) A fundamental concern for caring about how things are made, workmanship, is realized as a continual criterion of making as a measure of intentions reflectively brought into awareness as fundamental to the character of design. (Pye 1995) Engaging making constructs a transforming awareness of self-reliance as a habit of work, and as such, becomes a reciprocal measure of self-development within the piece being made and within the consciousness of the maker. (Stewart 2012) A first semester design project sequence provides a learning environment of decision, experiment, inquiry, and accomplishment in which understanding is developed within the projects as an unfolding self-awareness. It is an iterative project sequence that

compounds upon itself from geometric studies, then into pattern, then into relief and massing by use of plaster of Paris, then wood frame and modulation, then panel and mass and frame, then onto investigating the body (to foster awareness of body-space), culminating in a full-scale group construction of wood, cloth and binding materials that allowed full experience by the lived body. (Temple 2010) The projects are structured through forms of ‘looking’ as reflective forms of embodiment, to inform each stage of the project sequence within the immediacy of perceptual experience. Framing projects in terms of forms of looking enables students to reshape forms of experience they have yet to question through reflective inquiry and as a transformative encounter with their own self-development as designers:

drawing (look/think/act) : print (look at - look into and beyond) : relief (look over) :

mass (look into) : frame (look through) : modulated construction (look within) :

body as site (engaged looking) : full scale (look/walk about - look from).

Each successive iteration is evaluated in a group project review to compare and discover differing modes of transformation, especially regarding different media. Each new transformation reveals greater complexity of issues (i.e., geometry, proportion, module, repetition, sequence, depth, space, illusion, movement, perception, interaction, engagement, workmanship, choices made, etc.). Building a working lexicon of decision-making and critique in this reflective manner becomes key to self-education and learning to value developmental processes in a manner especially provocative of student self-transformation.



Figure 1. Support for a Rock (wire) Photo S Temple



Figure 2. Support for a Rock (paper) Photo S Temple

Project 1 - Place for a rock - drawing (look/think/act)

Students were introduced to design in the first five minutes of the first day of class by designing/making something. Presented with a rock and a 3' length of bendable wire, students are asked to design an “orderly support for a rock” in 15 minutes, using no tools other than their hands. (Figure 1) A reflective discussion of the hand-made projects revealed aspects considered in making design decisions, a lack of attention to workmanship, student conceptions and preconceptions, and a subversion of looking that supplanted the processes of design as invention versus discovery. This is normal to the uninitiated design student. Most students resorted to visualization of a final object as a means of design process, resulting in use of wire only to facilitate a predetermined image of the final project rather than discovering a direction by playing with the wire and rock. A follow-up project asked students to design and make a place for a

rock substituting paper for wire, using no glue, while retaining the “design concept” of the initial wire version. (Figure 2) The reflective discussion that followed explored the nature of design actions both conceptual and material, and the effect of workmanship on design decision-making. Most students reported a period of inspecting paper and “playing around” with it to investigate what paper could do. Students were then asked to draw a pictorial drawing of their own project. Drawing caused the students to reflectively observe as a way of acting out their design. However, with little drawing experience, students typically drew portraits of the objects that inform only their design’s character as object. (Temple 2009)

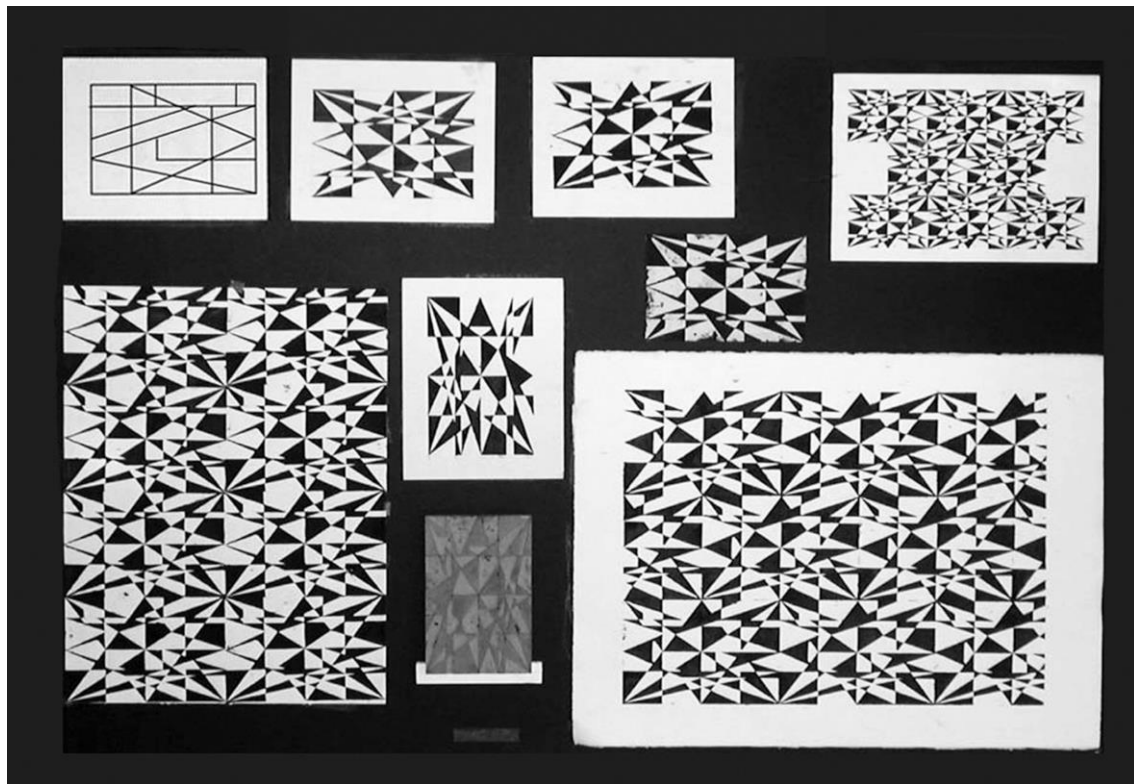


Figure 3. Documentation of the Printing Process Project (initial geometric drawing to final composite print) Photo S Temple

Project 2 - Printing project (look at - look into, and beyond)

Developing a design project necessitates many iterations and trial and error explorations, until a creative, conceptual focus begins to guide design decision-making. Students transformed their earlier “portrait” drawing (of their rock project) into a geometric structure to integrate the geometries of its figural form into the underlying geometry of the rectangular frame of a piece of paper. Through readings and demonstrations, students learned about and applied a regulating geometrical armature derived from the geometries of the original rectangle to establish the basis for constructing a complex ink block print from a simple value drawing. Making the value drawing required making choices about what parts of the geometry to fill in black and which not to fill in. Emergent patterns and visual cues (i.e., Gestalt principles) discovered in visual engagement seemed to reveal structures and forms beyond the ink itself. Reflecting on issues such as depth, layering, continuity, and space, then became key to raising questions about steps to take in each successive stage of the printing process as they develop a large multiple print.

Central to this project is the introduction of the necessity of workmanship as a critical aspect of design that links ideas and their realization in material. Good workmanship is typically achieved by first making a mess - easy to do when block printing - then realizing that any messiness causes interference with

effective printing processes. Focusing on workmanship as an essential part of a process of design/making is also a convincing lesson about learning to care about what one is doing, an attribute often lacking in beginning students. (Pye 1995) One well-accomplished final print is expected from a “path” of design iterations, accomplished by reflective analysis of trial patterns made with a copy machine. A composite presentation of all developmental steps is produced (Figure 3) as a reflective synopsis of process and decision-making and as an aid communicating design thinking. Another important purpose of this printing project is to establish design as a series of developmentally correlated decisions, rather than a moment of inspiration or stylized mimicry.

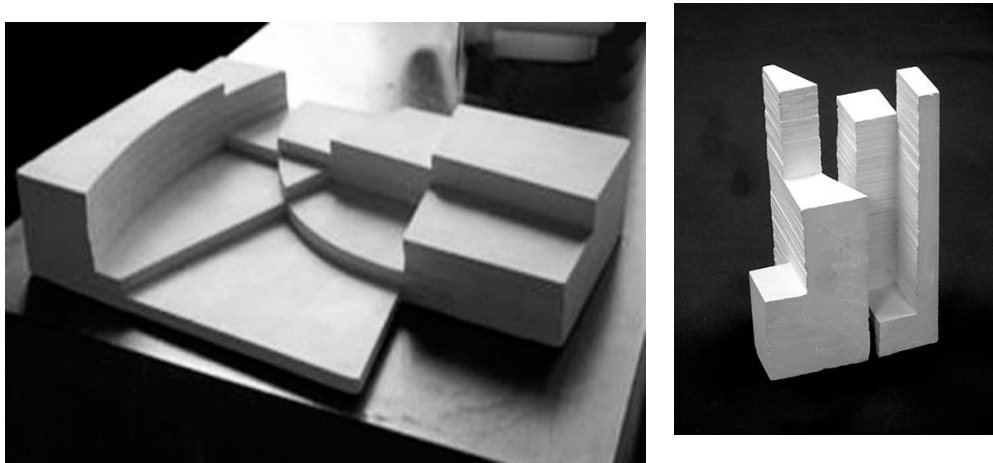
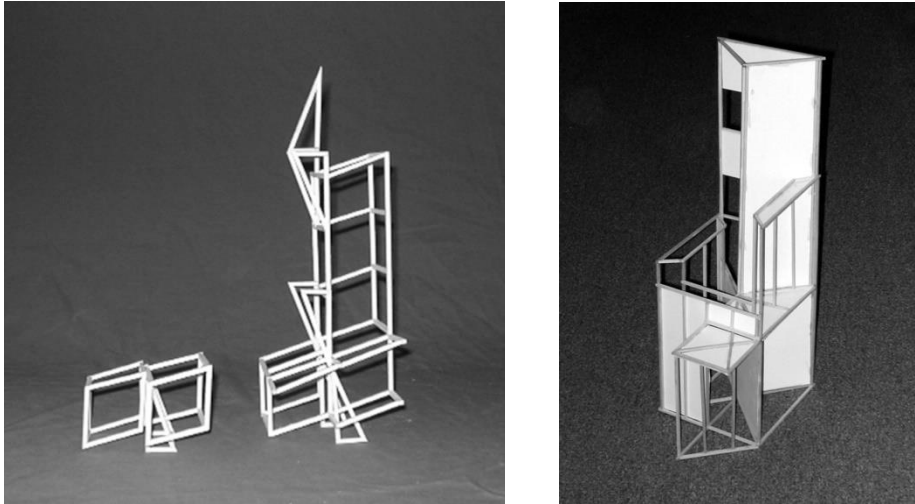


Figure 4. Plaster Relief and 3-dimensional Object Developed from the Printed Pattern Photos S Temple

Project 3 – 2D into Relief (look over)

The suggestion of visual layers, continuities, and depth in each student’s block print becomes a basis for transformation into a molded plaster raised relief. Attempts to visualize larger objects by looking beyond the ink of the print (Gestalt) required making many layering trials to successfully transform a pattern into raised layers, to develop geometries, and learn how plaster and mold materials operate as reversals of each other. Working to make a plaster mold as an extension of the geometries of a print requires a mold to be made in reverse of the geometries of the print, causing greater recognition of the value of an underlying geometric regulator in the work, an aspect critical to architectural design. Student projects foster realization that a plaster relief raises compelling material characteristics for spatial design and that material qualities are necessary considerations for design. A discussion of the emerging plaster forms revealed that design is not merely making a clever pattern but is an engagement in relationships between object and space and mass and void. Analyzing the projects by comparing one to another revealed that increasing the depth of each layer beyond simple relief into more three-dimensional objects dissolved the layering fully into objects, with massing similar to buildings.



Figures 5 & 6. Module and Frame Project and Fame Panel Project Photos S Temple

Project 4 – Module, Frame, panel, volume (look into)

The suggestion of volume in the plaster object became the basis for constructing a small three-dimensional module of linear pieces of basswood. This module was then creatively replicated as a modulated three-dimensional frame. Wood, as a material, had to be addressed - its strengths and weaknesses, its joinery, and the fact that a wood frame creates planes only at its edges, resulting in visual transparency and the emergence of space as a primary aspect of design as distinct from material presences. As students reflectively peered into their frames, solid and void thus became evident in the frame as space. It was discovered that looking into the spaces of the frame also suggested differing ordering systems of space. This effect became more evident in the next step as chipboard panels are positioned on the frame elements to conceptually re-define space/frame relationships. Issues such as pattern, depth, volume, movement, layers, thickness, and surface were thus developed by, within, and between ordering planes. Reflecting on the actions of building these structures, students realized that geometry is critical to order and construction and detail are fundamental to any modulated system. At this point in the project sequence, they reported seeing in the architectural world things they never noticed before, which is indicative of personal self-transformation.

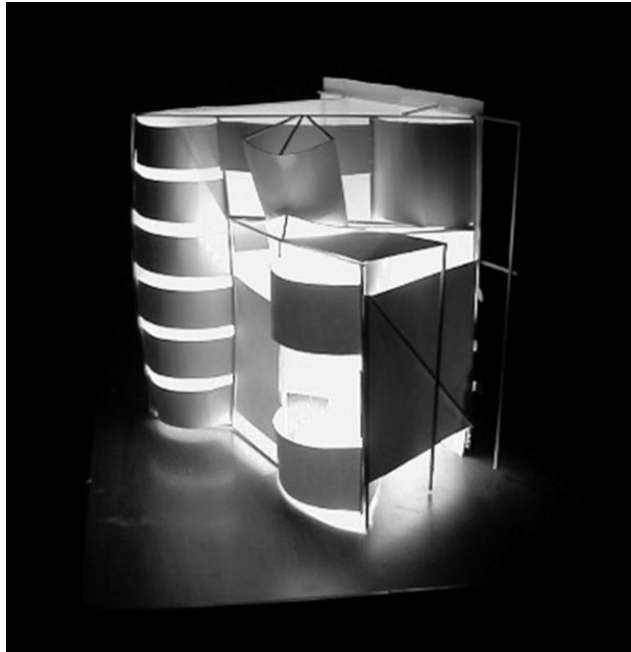


Figure 7. Frame Panel Mass Space Project Photo S Temple

Project 5 - Frame, panel, space, mass (look within)

The next project of the sequence challenged the student to transform the suggestion of spatial volume, plane, and frame in the previous iteration through the addition of mass as volume that is not spatial. Panel, mass, and frame act to enclose and thus develop architectonic relationships with space through the re-ordering of geometry in materials. Reflecting on this project, students were challenged to modify their viewpoint, to “look within,” to visualize and construct space - it became realized that interior space acts as a vessel contained by architecture. This interior was amplified by the presence of a small light bulb into the project, transforming it into a container of light. The making of the project reveals that how material, detail, and architectonics are merged, how materials are joined, and gives significance to more abstract architectural design decisions about the relation of spatial forms to material constructions. Ideas and making became simultaneous as materials are seen to define themselves as spatial within the language of designing.



Figure 8. Body Experience Project – Body Movement Deploys a Head Shading Device Photo S Temple

Project 6 – Engaging Body (transfigured looking)

Implicit in body is the act of movement, time, and the space surrounding the body, which are specific to a particular body and its transfigured projection into space. The space of movement is key to the engaging body. Students were asked develop a dialog between themselves and the space of their bodies using only constructions built upon their bodies. Body anthropometrics (i.e., limits, motion, dexterity, size, etc.) became design constraints, as the project must “fit” a specific body. Project construction necessitates not only the measure of the body but also the measure of kinesthetic movement. Available material palette is limited – frame, panel, skin – as a relationship to prior projects. Also, the project must be performed, causing the project to be designed as a choreography of body movements that both define and celebrate an event of communication of body with space and an exploration of the role of body in gestural communications within and by the physical environment. Gesture is discussed as an act of expression made as a sign of attitude or bearing. This project exhibits to students how gesture can be both examined and valued as foundational design thinking. Juhani Pallasmaa addresses the idea of gesture in architecture:

When experiencing a structure we unconsciously mimic its configuration with our bones and muscles; the pleurably animated flow of a piece of music is subconsciously transformed into bodily sensations, the composition of an abstract painting is experienced as tensions in the muscular system, and the structures of a building are unconsciously imitated and comprehended through the skeletal system. (Pallasmaa 2012, 71)

Buildings resonate in our experience of them and it is precisely because of our experience of our own bodies that this gestural communication between human and environment is made possible. This project intentionally examines the “feeling of experienced body” as the source of our attribution of qualities of feeling to buildings and spaces. By building constructions that integrate with the feeling of embodied experience, body is identified as a primary locus of creative, constructive transformation in experience. Based upon a tempestuous word (i.e., ecstatic, lugubrious, impetuous, etc.) chosen at random, students constructed directly on their own bodies to convey the word’s character as it is felt, with the idea that others viewing this body-construct can comprehend its gestural character. Materials used to transform body are limited to wood strips, binding materials, and cloth. Transforming body engages both theater and poetics to develop the unconscious transformations elucidated by Juhani Pallasmaa. A social “ice-breaker,” the body project puts students in the unfamiliar place of being “on stage” and transforms social barriers while building a culture of design discourse. The project creates commitment to design because the designer IS the project, not an object apart from the designer. More significantly it is discovered that transforming body mediates and structures time and space and celebrates and makes elegant the relationship of body to the built things of the world. Projects that transfigure the lived body open possibilities for future imaginings only available in that place between direct experience and reflection and only available in fundamental experience - basic inquiry about feeling, body, language, experience, and environment.



Figure 9. Full Scale Project Photo S Temple



Figure 10. Full Scale Project (overhead view) Photo S Temple

Final project – The body in space: full-scale project (look/walk about - look from)

The final project of the semester was specifically structured to link making, thinking, abstracting, and visualizing with the requirement of an architecture for occupancy by the living body in a material environment inclusive of movement and time. As a comprehensive culmination of the sequence of previous projects, teams of four to five students design and construct an “incident of human occupancy” derived from basic human activities common to public places that students have observed in public spaces. Direct experience initiates the project as students are sent to experience, discover, and identify basic forms of human occupancy as found in city environments. Common bodily experiences, reduced to a single word (i.e., anxiety, anticipation, etc.) are assigned randomly to student teams as the basis of the project. Materials are limited to wood lattice strips, a binding material for joinery, and sheer fabric. Glue is forbidden so detailed mechanical connections became necessary. A 6' x 6' site was assigned to each group and finished projects became installations on campus. The group project fosters much reflective dialog within the task of designing and making a project beyond the scope of an individual student. Each individual was then challenged to find common ground as they conceptualized, experimented, strategized, and built a model of a design proposal. Much design refinement occurred within the experience of moving from an idea in model form to full-scale construction. Resolution of design in direct construction gave rise to detail. A key lesson of the experience of the full-scale project experience is that there is as much design in the concreteness of detailing and fabrication as there is in abstract conceptual thinking. During critical review, when students are walking through the projects, there is a discovery that “looking out from within” is perhaps the most primary of all architectural experiences.

Outcome: Subsequent Learning Through Abstraction

After experiences in making/reflecting in the initial design studio course, the studio course in the following semester introduces design process utilizing abstract mechanisms to develop a context of representation against which concrete investigations of embodiment become a referential ground. Instructors who teach subsequent studio courses have found that having students work through a series of

projects focusing on direct experience followed by reflection of that direct experience as a part of the processes of design enables an interiorization of a reflective practice that readies them for the addition of more abstract ways of working. Abstraction occurs in the use of representation, including diagramming, analysis, drawing conventions, modeling, simulation, scale, context, as well as the use of narrative, metaphor, and the nature of ideation. Projects of the second semester intentionally employ a conceptual approach to develop a hypothetical proposal in which concrete experience and reflective observation are implicitly engaged as the “raw material” of abstract thinking. Although the use of abstract conceptual modes is a necessary aspect of design, the learning experiences in the initial semester keenly illustrate that abstraction is always built upon the concrete experience of embodiment.

Conclusion – Embodiment, Acting, and Reflecting

A conception of fine art that sets out from its connection with discovered qualities of ordinary experience will be able to indicate the factors and forces that favor the normal development of common human activities into matters of artistic value. (Dewey 1904, 11)

Jose Ortega y Gasset, in *History as a System*, is critical of artistic processes derived primarily of thought because abstractions oversimplify the relation of human experience and environment by prioritizing thought apart from the physical world. The embodied mind interacts within and because of sensory contact with things and as a result, over time, acquires discipline. Ortega y Gasset likens the lessons of the palpability of our embodiedness as both teacher and governor of an intuitive soul. (Ortega y Gasset 1962) Our embodiment requires skepticism that abstract learning can prefigure embodied experience as a solution to architectural design projects if the use of abstraction has no ground in the embodied experience of the world. Design that values the physical realization of abstractions creates an environment that negates the substance and individual valuation of embodied experience inherent to issues like materiality, light/shadow, proportion, spatiality, and, importantly, the affective effects of our embodiment in the material world on the feeling of things.

We are physical beings. The world is physical and we are WITHIN it. Abstraction happens in reflective thought and analysis. However, we are not our minds alone - we are an embodied mind and the body is more significant in experience than we believe it to be. Design pedagogy that can re-acquaint beginning students with the actual physical world acknowledges and can build on this. A design pedagogy that situates the direct experience of our embodiment in the world as the ground for abstract, cognitive development of creative intelligence will always account for the physicality at the heart of the work. Certainly, the physical environment conveys ideas but these ideas are conveyed within embodied experience only when linked to material and spatial presences. These physical presences form the ground of abstract ideas and give body to conceptual representations that are otherwise formless. The mere idea of “giving body” to representation in the conversion of the two-dimensional into the three-dimensional describes a more unified relationship. Images and representations of mind originate in sensations of the physical world but this origin does not vanish or drop from significance once the mind forms a representation. As a foundational experience for design education, learning exercises that are principally abstract in nature disassociate designing from embodied experience and may lead the student to believe that the value of their work (and the built environment) lies principally in representational or fully abstract content. Experiential content is devalued, and marginalized, subverted, or forgotten.

To the contrary, a pedagogical model for beginning studio education based on phenomenological hermeneutics pairs making and reflective thinking as complimentary operations. Key to actualizing this pedagogical structure in the design studio is Piaget’s notion that each student self-initiates their own operational conditions to construct new mental structures. Some students will conceptualize and be informed by making; others experiment with making and discover conceptualized thought; still others “receive” conceptualizations primarily through reflective activity (such as dialog and critique). Creative designing always necessitates varied modes of learning activities and always engages a hermeneutic structure of reflection on what has been done as a part of design processes. Supportive and integrative design pedagogies also allow, fertilize, and propagate design methodologies that both facilitate and interact with the creative community of studio culture so necessary to foundation education. Utilizing direct material experience as a basis for design learning locates abstract content by way of each student’s own reflection, selection, experience, discovery, and surprise. Importantly, direct experience and

subsequent reflection ultimately places the student in charge of their own learning through dialog with the self through reflection on decision-making, trial-making, self-critique, material exploration, process selection, and importantly, mistake making. The teacher's role is to become responsive to student inquiry, a partner in design that can provoke transformational reflective thought. Following hermeneutic method, students that become oriented toward reflection within process will be looking for what they can discover, think about, critique, and act upon. If first educational experiences establish conditions for the reception of learning, then enabling students to make their own inquiries through their own reflection on actions in the world sets patterns that reinforce the self-development necessary to creative studio education.

References

- Alsaigh, Rasha & Coyne, Imelda. (2021). Doing a Hermeneutic Phenomenology Research Underpinned by Gadamer's Philosophy: A Framework to Facilitate Data Analysis. *International Journal of Qualitative Methods*, 20, 1.
- Bruner, Jerome. (1962). *On Knowing: Essays for the Left Hand*. Cambridge: Harvard University Press.
- Dewey, John. (1904). *Art as Experience*. New York: Perigree Books. Dewey, John. 1937. *Experience in Education*. New York: MacMillan.
- Dibley, Leslie, Dickerson Suzanne, Duffy, Mel, & Vandermause, Roxanne. (2020). *Doing Hermeneutic Phenomenological Research: A Practical Guide*. Thousand Oaks, CA: SAGE Publications Ltd.
- James, William. (1904). *Talks to Teachers*. New York: Henry Holt.
- Kolb, David A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs NJ, Prentice Hall.
- Leamson, Robert. (1999). *Thinking about Teaching and Learning - Developing Habits of Learning with First Year College and University Students*. Sterling VA: Stylus Publishing.
- McCulloch, Malcolm. (1996). *Abstracting Craft: The Practiced Digital Hand*. Cambridge, Mass: MIT Press.
- Ortega y Gasset, Jose. (1962). *History as a System*. New York: Norton & Company.
- Pallasma, Juhani. (2012). *The Eyes of the Skin: Architecture and the Senses*. London: John Wiley and Sons.
- Piaget, Jean. (1983). Piaget's Theory. *Handbook of Child Psychology, Volume 1*. P. Mussen, Editor. New York: Wiley.
- Pye, David. (1995). *The Nature and Art of Workmanship*. Bethel, CT, Cambium Press.
- Schön, Donald. (1983). *The Reflective Practitioner: How professionals think in action*. New York: Basic Books.
- Stewart, Mary. (2012). *Launching the Imagination: A Comprehensive Guide to Basic Design*. Fourth Edition. New York: McGraw Hill.
- Temple, Stephen. (2009). Initializing the Discipline of Design in the First Project(s). *Proceedings of the National Conference on the Beginning Design Student NCBDS 25*. Baton Rouge LA: Louisiana State University: 207-214.
- Temple, Stephen (2010). A Bio-experiential Model for Learning Creative Design Practices that Supports Transformative Development in Beginning Design Students. Special Volume: *Design Education: Explorations and Prospects for a Better Built Environment* Ashraf M. Salama and Michael J. Crosbie (editors) *International Journal of Architectural Research, Archnet-IJAR*, Volume 4 - Issues 2-3 - July and November 2010 - (116-138)
- Woolfolk, Anita E. (2000). *Educational Psychology*. New York: Allyn & Bacon.