Apprehending the Creative Process through Drawing in the Foundation Design Studio.

Chahid Akoury

Lebanese American University

Author Details

Dr. Chahid Akoury, is an assistant professor at the School of Architecture and Design, Lebanese American University.

Correspondence concerning this article should be addressed to Dr. Chahid Akoury, School of Architecture and Design, Lebanese American University, Chouran, Beirut, 11022801, Lebanon

Contact: chahid.akoury@lau.edu.lb
Abstract

One of the main goals of design education is to enhance and enable creative thinking. Therefore, effectively teaching visual representational and interpretational skills is vital for the communication and articulation of such ideations.

This article will explore examples from two specific introductory design studios where my personal pedagogical approach emphasizes drawing as a creative language of reflection and critical conceptualization. The aim of my approach accentuates the exploration of any idea through drawing, and thus allowing this graphic language to aid in the generation of creative thinking.

Drawing, then, assumes the role of a research process concerned not only with the projection of thoughts, but with the study of correlations, and the consequent incorporation of perceptive and conceptual articulations.

Keywords: design thinking, creative process, communication, drawing, conceptual articulation, education, design studios.
Learning how to effectively convey an idea is a fundamental component of any designer's education. Related to this, effectively teaching visual representational and interpretational skills is vital for ensuring the design student's ability to communicate and articulate percepts and concepts. These principles stand at the core of the School of Architecture and Design at the Lebanese American University (LAU)’s comprehensive and multidisciplinary Foundation year, which enriches students’ design culture across all design disciplines taught at the university. The program is perfectly suited to students who have little to no art or design-related background, and offers a comprehensive introduction to design as a creative activity through a pedagogy that emphasizes critical reflection, conceptualization, and analysis.

The present article considers the context of two specific courses within this Foundation program, namely, the first an introductory design studio that serves as the primary purveyor of the fundamentals of design education (Ledewitz, 1985), and the second a sequence to the former and a master studio in foundation, where the techniques and methods acquired in the previous studios are taken to a higher level in a project that emphasizes process thinking in design, effectively synthesizing between two and three-dimensions.

I will be presenting my pedagogical approach to both studios, and my utilization of drawing as a creative design language to initiate the students into a method of thinking led by reflection and critical conceptualization. My endeavor was for the Students to attain a keen sense of perception and critical inquiry in exploring any idea through designing by drawing and vice versa. I believe these
latter attributes to be at the very core of design expression, and therefore, one of the primary objectives in my studio was to instill in the students the ability to communicate their ideas through various expressive media and drawing skills. Drawing proves to be a strong and mandatory skill for all designers since it is a means of both analysis and synthesis articulating artistic and creative ideas (Goldschmidt, 1991). In his book *The Thinking Hand* Juhani Pallasmaa writes:

Drawing is a process of observation and expression, receiving and giving, at the same time. It is always a result of yet another kind of double perspective; drawing looks simultaneously outwards and inwards, to the observed or imagined world, and into the draughtsman’s own persona and mental world. Each drawing contains a part of the maker and his/her mental world, at the same time that is represents an object or vista in the real or imagined universe […] the image arises simultaneously with an internal mental image and the sketch mediated by the hand. (pallasmaa, 2011, p.90-91)

Pallasmaa proposes here that drawing is an expressive amalgamation of perception, memory, and subjectivity. Drawing bears witness to internal mental percepts, concepts, feelings, and images. This translates into one of the main outcomes for the studio and the foundation of my pedagogy for teaching design. Students should eventually develop personal critical interpretational skills within a clear methodological framework. It is my intention to allow for a paradigm shift in how students think, by introducing them to drawing as the language of creative
design thinking. For me drawing for designers is the articulation of ideation and observations. The hand interprets mental images and constructs of perceived and imaginary things, which the eye perceives again in a perpetual process. This on-going communication between interpreting, perceiving, analyzing, and reconceiving is what constitutes design thinking.

To clarify, the focus here is not on evaluating mark-making, proficiency in drawing media, and the implementation of various techniques. Rather, the intent is to explore how drawing at the outset of design education is used as a pedagogical tool that incorporates creative perceptual and conceptual thinking.

Fundamentally, the act of incorporation is how humans learn and acquire the use of new instruments. The act of incorporating designates the literal aspect of bringing within a body. In other words, incorporation allows the procurement of new abilities (Leder, 1990). From a constructivist perspective, and contrary to the traditional sense and consideration of the act of interpretation, Wolfgang Iser (2000) propounds its meaning to be an outcome of the interaction between reader and text. This interaction rejects the mere definition of the object, and instead values the production of meaning as an effect to be experienced and therefore incorporated. Consequently, were students to simply apply their own framework in order to assess and define their own ideas, they would end up objectifying them.

This outcome is problematic because any visual representation will end up being a conscious interpretation. In the case of students who have no knowledge of conceptual thinking—or any awareness of the act of perception and the role of the
two in visual expression—this conscious expression will either take the form of a mimetic reproduction of geometries and shapes familiar to the students from memory and previous encounter, or of them quite literally drawing a blank. In this regard, Ackerman believes that drawing is a medium of individual expression and claims that, within the context of design, it is not merely a documentation tool that contains and reveals factual and empirical information. It is, rather, a graphic language that speculates on concepts and propounds personal views and percepts (Ackerman, 2002). Under the umbrella of design, drawing as a form of communication assumes a very personal and subjective tone. Here, drawing proves to be an intellectual practice, where several phases of a design process rely on a reflective and exploratory language that visualizes ideation. Halliday (1994) elaborates upon this coupling of reflective and interpretive where he posits that:

All languages are organized around two main kinds of meaning, the ‘ideational’ or reflective, and the ‘interpersonal’ or active. These components, called ‘meta-functions’ in the terminology of the present theory, are the manifestations in the linguistic system of the two very general purposes which underlie all uses of language: (i) to understand the environment (ideational), and (ii) to act on the others in it (interpersonal) (p.39).

Within design, drawing assumes two tasks, with the first being purely representational and reflective of the thought process and the Idea, and the second being exploratory and speculative. ‘When used for exploration, the representation is used to answer a variety of hypothetical questions which may be posed by the
designer’ (Galle, 1999, p. 63). Therefore, the activity of design is founded on a methodical and creative process of asking question and exploring speculative solutions. This process is the product of individual insight, perception, interpretation, and eventual expression. In order to engage in a creative act, one has to always forgo conscious control (Ehrenzweig, 1961). Related to this, design education and the subsequent introduction to design thinking builds up the capability of alternating between differentiated and undifferentiated modes of thinking, the consciously controlled and the unconsciously imagined. Creative thinking implements both in the service of imagination and reasoning. Designers tap into their deepest unconscious and pull out mental images that might conflict with facts and conscious understanding. At the same time, the design process is based on specifying a problem or an issue and pursuing a well-defined and structured procedure towards resolution, i.e., problem solving.

**Previous Research and the Pedagogy of the Foundation Program**

A proper design education should provide and instill in the students the capacity to express both an unconscious expression and its conscious reasoned application. There have been precedent case studies and articles that tackle the significance of visual communication at the early and intermediate studio phase. Those are reviewed in the following paragraph.

Adiloglu (2011) explores the importance of visual communication and design thinking as the building blocs of of design education, through considering the context of a basic design studio and its underlying pedagogical approach. This
research however focuses more on the teaching methodology and assessment criteria. Following students’ progress through exploratory work in 3D form, photography, and sketching, Adiloglu (2011) examines learning strategies and proposes a synthesized a module to be adopted by educators. Although the study considers the context of the studio, it does not investigate teaching drawing as a tool that translates and incorporates methods of visual inquiry and design thinking.

Another study, by Cikis and Ek (2010), examines the use of conceptualization as an educational tool in design studios. They argue that conceptualization may not be properly applied within the conventional system of education. Their study utilizes visual representation and drawing as a language that expresses and articulates concepts. Moreover, it analyzes the relationships and functions of drawing as the very medium of conceptualization within the design discipline (Cikis and Ek, 2010). While this research emphasizes the importance of drawing in both analysis and the conceptualization of ideas, the study itself was conducted on sixth year studio students, who had already developed their own visual communication and graphic representational skills. Additionally, the research does not examine perceptual skills in relationship to drawing and the medium’s significance in processing and analyzing information.

As previously stated, students joining the Foundation Program at LAU are introduced to the basis of design. An emphasis is placed on abstraction, whether in searching for or interpreting ideas and meaning. This pedagogy stands in contrast to the Beaux Art method, which values observation and the
understanding of previously established work and their defining tropes in the
service of learning through reinterpretation and reproduction. In contrast, as
already suggested above, the studio's pedagogy is grounded in the theory of
constructivism. To be more precise, Jean Piaget posits that individuals establish
knowledge of new information through a process of accommodation and
incorporation. Piaget arrives at this theory by focusing on learning that which
contradicts presumptions and preconception. Only through a reframing of one's
mental representation of the external world will new percepts arise. Although
constructivism was not conceived of as a pedagogy, the fact that as a theory it
deals with and propounds the methodology through which learning happens,
regardless of preconceptions and previously accumulated tropes, makes it
relevant. The theory proposes that the construction and assimilation of knowledge
occurs out of personal reflection and experience.

In this spirit, both Foundation design studios at LAU, as the initiation to
design, foster creativity and provide the students with new methods and
paradigms to observe and respond to both real world conditions and to imagined
scenarios. Additionally, the studios prioritize conceptual thinking and application.
The basis of any concept is abstraction, and therefore, conceptualizing poses a
way of considering an idea and its implementation and interpretation. It is by way
of the concept that design activity is instigated. However, the design process does
culminate in production, and ideas or personal observations alone are not capable
of provoking a concrete final outcome. To insure a valuably designed yield,
a concept should be synthesized through logical and rational decisions and investigations. These investigations result in a language that communicates the somewhat subjective and personal conceptual discourse of the design to a much larger audience. In other words, although concepts are inherently abstract, by way of design they are processed into practical intention.

In order to better illustrate the ideas expounded above, the discussion that follows is based, first, on the basic design studio as it was held at LAU during the Fall semester, and second on the master in foundation studio which took place during the Spring semester.

**Elements of Design as Parameters of Creative Abstraction**

From the beginning of the semester up until the deadline for the drawing phase, students were exposed to the elements of design: point, line, plane, volume, orientation, scale, form, value, texture, and tone. Students additionally read and discussed with the studio instructor several texts pertaining to the elements of design and their implications as a language system. The formal compositional orders, or what is commonly known as design principles, were extensively explained through established and widely renowned fine arts and design examples as well as through publications. The main text in use was Wassily Kandinsky’s *Point and Line to Plane*.

This aided in the initiation of the students into proper visual thinking and communication, particularly because Kandinsky rejects the previously mimetic and conventional approach to visual communication in favor of an abstract
language based on the elements of design and governed by its. Didactically, it relies on eliminating preconceptions and nurturing creativity in order to explore new and unforeseen paths. Exploration, nonetheless, is not left to idle happenstance but follows a meandering journey based on incremental strategies of research and examinations. Studies are conducted of form, proportion, compositional balance, rhythm, relationships, color, texture, and material. Even sensual and creative expressions are rearticulated along these multiple pathways.

Wassily Kandinsky's theories were applied in the studio in a number of ways. Kandinsky considered the point—which is the basic geometric element—and explicated its innate qualities and transformative abilities. Kandinsky's interest, which is elaborately discussed in his publication *Point and Line to Plane*, lies in analyzing the various forces interacting on the point and their consequences in producing an array of line qualities. Linguistically, the point is an element that signifies silence. Upon deeper scrutiny, it appears to interrupt the continuous movement of ideas whilst bridging two varying notions or directions (Kandinsky, 1947). Prior to entering the Foundation Program, students may be considered akin to point in its traditional sense: static and creatively silent, they adhere to a normative educational formation and analyze things according to one fixed direction. Once within the Foundation Program, the intention is for them to undergo an epistemological shift in their perception, which in turn instigates a transformative activation of their innate imagination and creativity.

Furthermore, since the studio deals primarily with spatial thinking, i.e., three-dimensional formal investigations, students in the semester under
examination were required to read three further texts: Peter Zumthor's
"Atmospheres", Lebbeus Woods's "The Question of Space", and Gaston Bachelard's
"The Poetics of Space."

"Atmospheres" provides a deep insight into Zumthor's mental images and
thought processes. The book enumerates several spatial images, both perceptual
and conceptual, and how those have informed Zumthor's design thinking.
Emphasis is placed on composition and the significance of materials and size and
scale in implementing and producing the proper conditions and atmosphere for
the effects of light and shadow, time, motion, presence, harmony, in short
phenomenological experiences. The purpose of assigning this reading was to
show the students how sensibilities about specific ideas and the feeling we get
from being in certain spatial situations or events become constructs for the design
and inception of dwelling spaces.

For its part, the Lebbeus Woods text it proposes space as a mental
construct and suggests that this non-material nature of space should inform our
design decisions. The space which is envisioned and imagined in the mind does
create a sense of 'being there' or inhabiting it, since our senses perceive them as
such. The question proposed by the author is in line with the pedagogical
approach of the studio brief: given that there are no limits to what we can
conceive when imagining spaces and experiencing them in our minds, how close
can we get in conveying such an expansiveness?
Visual Presentation of the Reflective

Furthermore, the studio brief itself starts with a quote from the third text, Bachelard’s *Poetics of Space*: ‘Space calls for action, but before action the imagination is at work’ (Bachelard, 1994). Perception of space is to a large extent an outcome of mentally registering the physical and emotional information within the space. As such, the particularities of structure, the effects of gravity and notions of balance, hierarchy, stability, scale, orientation, composition, and continuity, are understood and incorporated. Additionally, proprioceptive information is registered through changes in values of light and shadow, stillness and movement, the intensity of color and depth of field, difference in distance, direction, and scale. In order to demonstrate how such constructed conceptual mental images may take shape into spaces, students were asked to carefully select and reflect on a citation from Bachelard’s text. Students first wrote a text reflecting on their chosen citations from Bachelard’s text. Referring to Corrine Delage and Nelly Marda’s (1995) explication of the role of language in design, there exists a strong relationship and interaction between discourse (written and verbal) and visual representation (drawing). They believe that design concepts are materialized and therefore produced due to the necessity and the interaction of both. Furthermore, the written language precedes the visual one in presenting a way of understanding and 'uncovering' students' process of ideation. It is through language that understanding happens. Additionally, their interpretation of these mental constructs via writing enabled them to be reflective with the aid of a text
on spatial thinking and experience, and relay their ideas—percepts and concepts—to others. They were then asked to start exploring the visual expression of their reflections.

An important thing to note is that I provided one specific rule when approaching the drawing. Since the premise for the course is Kandinsky’s point and line to plane, students were restricted to using these primitive geometric elements as their language. However, students were told not to rely on platonic solids; indeed, they were encouraged not to think of geometry in the conventional sense. Through active learning and constructive assimilation, students had to demonstrate a capacity to evaluate both the formal and conceptual dimensions of their ideas by using a visual vocabulary based on the elements of geometry rather than on geometric solids. Those can be both extracted from observation, or from their minds.

In their own drawings students had to show an accrued understanding and interpretation of the fundamentals of visual perception and the formal compositional orders that inform two-dimensional and three-dimensional design. In what follows, we look at three texts selected by students and their drawing in response to these texts, as an example of this pedagogical approach (the student work described here was selected because it was the best in the class).

The first student selected the following quote: 'If there exists a border-line surface between such an inside and outside, the surface is painful on both sides. We absorb a mixture of being and nothingness.' (Bachelard, 1994, p. 218)

In her interpretation, she felt that what the text is dealing with is some sort of
demarcation line. Through research and discussions, she was guided towards the
notion of threshold as the point of entry, the interpenetration of inside and outside,
rather than an end point. This elaborates on Martin Heidegger's notion of the
threshold in his essay *Building, Dwelling, Thinking*, in which he suggests that a
threshold is a space of sustenance for the inside and the outside:

> The threshold is the ground-beam that bears the doorway as a whole. It
> sustains the middle in which the two, the outside and the inside, penetrate
> each other. The threshold bears the between. What goes out and what goes
> in, in the between, is joined in the between's dependability. (Heidegger,
> 1971)

Therefore, in her drawing the student designates the upper lightly rendered shapes
as the outside space extending outwards and fading, while the shadows are an
image of the inside space, deformed and closing in on itself. The little blank space
separating them is that border-line surface that is commonly shared, painful since
it is a void belonging to both spaces. (figure 1)

> The second student selected this excerpt from Bachelard: 'In the cellar,
darkness prevails both day and night, and even when we're carrying a lighted
candle we see shadows dancing on the dark walls.' (Bachelard,1994, p.

19) Starting with the definition of a cellar, the student built up the concept of
being trapped due to this descent into a dark space. Her mental conception of
spatial experience is fully due to the interplay between that which is sometimes
revealed due to the faint candle light, and the combination of being immersed in
utter ambiguity. The candle as the agent of this interplay becomes the generator of
the percepts. The student was encouraged to look into Piranesi’s *Carceri D’invenzione*, or imaginary prisons. Her interpretation eventually led to a drawing which is entirely composed of shadows. The glimpses of light from the candle and the cast shadows become soft rendered shades and superficial shapes. The shadows themselves consist of the downward staircase that lead as they entrap. The placement of the shapes and the geometric elements create a sense of shifting movement that is akin to that of candle light shadows dancing on the walls.

(figure 2)

The third student's drawing used as an example here (figure 3) elaborates on this excerpt from the text: ‘The pious forest is shattered, closed, serried. It accumulates its infinity within its own boundaries.’ (Bachelard, 1994, p. 186)

In a discussion with me, the student was encouraged to look into the notion of seeing something from two viewpoints: inside and outside. From the outside, the forest may be represented as a specific frame, the borders that constitute that which is visually different from the surrounding. On the inside, dense and unyielding, it seems to contain infinity. The lines were folded, and by doing so the logic of a fold was introduced. The student was guided through the work of Gilles Deleuze and in particular his philosophy around folding and architecture.

The final drawing proposes alterations without any particular or reductive identity to the outside and the inside. They both bleed into each other, instead of being strictly defined, the inside becomes outside and vice versa. Ultimately, the drawing presents a visual documentation of infinite multiplicity.
Concretization of the Abstract

This studio implements a process of critical investigation into perceived phenomena and objects. It is characterized by an architectonic inclination, and is instrumental in preparing the students who will eventually major in Architecture. I will only discuss the initial phase of the studio outcome which is concerned with the application of drawing as an analytical and interpretive language. Students started by considering the physical space of the studio as a location for the emergence of potential sites for the later construction of an architectonic apparatus. Students had to pay specific attention to the concepts of structure, organization, and spatial relationships. Primarily, drawing presented the analysis of these locations, which are deconstructed and probed. I explained and taught the students three graphic methods of abstraction that communicate their inquiries. The first method is distillation, where irrelevant elements were omitted. Only those aspects which are critical are represented. The second is reduction, which build up on the previous in succinctly representing specific relations. The final method is extraction, which is akin to parti diagrams: a component or part is given special consideration while staying within the schematic framework. (Lasseau, 2001, p. 85)

These enabled the outcome to convey both structural and formal information in a conceptual and exploratory re-configurative manner. The diagrams that were made by the students inspected existing elements such as assembly, geometric organization, proportions, shape, volume, voids, cast shadows, light reflection and
refraction, directional axes, and distortions of perspective. This process, while abstract, allows the concept to be expressed in more concrete terms. Students were concerned with the extraction of perceptual data from these locations and consequently transform them into meaningful layers of information through the use of proper notation, geometric elements, and relevant visual discourse. This process allows for an abstract dialect of lines, planes, solids, shadows, and volumes to be applied in favor of schematic compositions that are apt for concretization. These drawings are used to ‘uncover the breadth of richness that exists and leave open ways and styles of graphic thinking or designing’ (Paul Lasseau, 2001, p. 85)

One student selected one of the many radiators found in the studio. He started by first, analyzing the form and geometrical order of this location. He then proceeded to determine and extract an orthogonal and parallel structural grid, which enabled him to reduce the radiator’s mass to the sum of the voids and negative spaces present within it. Moreover, the student reassembled all actual surfaces that allow for these voids to occur into one composed diagram. This diagram displays how the two-dimensional surfaces in their orientation, ‘frame’ voids that exist within the space of the room. This framing enables the production of rhythmic spaces, or a structure comprising of voids that give the mass its meaning. (figure 4)

Another student selected a speaker unit hanging on a load bearing beam. His approach highlighted the many strata that compose both the speaker itself, the bracket, the wires and cables, and eventually the wall. His analytical mapping
approach demonstrated the relationships between the different elements that compose the space. He reduced all forms and masses to planar figures. His use of this abstract graphic language enabled him to identify and represent alignment, overlapping, and relationship of position. (figure 5)

A third student utilized drawing as a form of research and inquiry. He divided the system of a sliding door into its fundamental components and explored the spatial implications of each. His method highlighted the compositional aspects that were created by the different assemblies within his location, and how the movement of the door itself plays a major role in the redefinition of the spatial order. (figure 6)

**Initiation into the creative Process**

According to Allen Hurlburt (1981) the creative process starts initially with analysis. This initial phase is centered on deductive reasoning and is initiated by the conscious accumulation of all information of a given project or context. Hurlburt (1981) points out that only an experienced designer will be able to know how to extend their knowledge and combine this newly acquired information with their existing body of knowledge to establish a basis for creative thinking. Furthermore, Newel, Shaw, and Simon (1959) propose that creative problem solving is characterized by four conditions: the originality and significance of the creative concepts, its unconventionality in refusing or refashioning previously accepted ideas, its tenacity, and finally its ability to articulate a vaguely presented problem.
The first design studio provided the students with the freedom and the reliance on personal expression to formulate a graphic thinking logic and to present it within the parameters of abstract geometric elements. This visual ideation and exploration elaborated on the speculative nature of subjective interpretation of percepts and concepts. In the second studio, students expounded on information that they have extracted through an innovative and original visual language that unconventionally presents structure, geometric organization, and spatial formal order. This process is one of discovery where the students found 'their own voice' through reading and understanding that which exists, and creatively reinterpret it, through communicating reflection, analyses, encounters, and their reasoning. Overall, both studios are concerned with the production of the 'image as the multivalent source of meanings.' (Haddad, 2006)

**Discovery and Incorporation of a Creative Thinking**

Students pursued a process whereby they integrated manual skills in articulating a language. This communication enabled them to learn an important aspect of design, which is the conscious implementation and interpretation of ideas. By doing so students demonstrated their command of interpretive and representational expressive methods in addition to logical and intelligence decisions involved in choosing different line weights, tones, values, directions, compositional orders, and relations. Through the process of drawing, and during the procession of the studio, students engaged in 'the pleasure of finding things out, the joy in the discovery, the observation.' (Feynman, & Robbins, 2007, p. 14)
Utilizing the movement of their hands in coordination with drawing tools, students had the time to assimilate and reflect upon the act of drawing and observe the process. This allowed for any decision to be consciously taken and well-reasoned. None of their marks was hastily laid out. Through this process, students had the opportunity to think of and contemplate on each element in their drawing and how they elaborated on their ideas. These drawings present themselves as ‘a slow and often uneven accumulation of stitches’ (Feynman et al., 2007, p. 14), that concerned with the articulation and expression of concepts and percepts alike.

At the end of the day, within the Foundation design studios and in my pedagogical approach to both, the emphasis is placed on the act of drawing itself, as a necessary skill for creative thinking and design problem solving. I stress on intuition as that which renders the expressive language of drawing embodied and incorporated. Intuitive expression stems out of pure spontaneity and feelings without reasoning. At the same time, the drawing dialect, if one were to call it this way, posits the fundamentals of geometry in a logical and formal relationship to one another. By formal I am referring to elaboration on the becoming of a thing. Although in the second studio, the form of what exists enables this becoming.

Drawing, then, assumes the role of a research process concerned not only with the projection of thoughts and creative ideas, but with the study of correlations, ‘literal and articulated observations’ (Founier & Hawley, 2009, p.179), and transforming them into a graphic language, which ‘move[s] away from
accounting for what exists and instead speculate about what might become.’ (Redström, 2017, p.65)

Consequently, one synthesis of such correlations is evident in Emanuel Kant’s notion of the *schema* (Palmquist, 1993). This third thing assumes the role of containing both intellectual and sensible representation of the same. The schema, which in my case stands for the graphic language, is the product of imagination, and it mediates between intuition and understanding in order to ‘subsume the uncoded array of sensations, the empirical objects of intuition, and convert them into images that can be processed by the understanding’ (Hays, 2016).
References


