

Making is Thinking: Emphasizing Inquiry Through Technique in the Beginning Design Studio

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"A composition is nothing other than an exact law-abiding organization of the vital forces which, in the form of tensions, are shut up within the elements."

Wassily Kandinsky

A student's first design studio can be particularly challenging as the creative learning that takes place in the studio is frequently at odds with the less explorative format of more traditional education. However, the freedom to explore is also frequently met with confusion, as students at this early stage are not yet accustomed to solving problems without a set methodology to follow and therefore certain methods are necessary to excite the act of making. This paper describes a focused series of exercises that build on the skills learned in the first year, but transitions from skills to intention by employing the idea of technique as inquiry through applied skill. A series of daily and frequently intense assignments were given in which the students were required to apply a method of inquiry through specific operations to a series of original artifacts, first in the form of drawings and then ultimately leading to three dimensions. Inquiry was presented not as a function of thinking then doing, but thinking through doing. In this way, technique and inquiry are not mutually exclusive, but correlated.

In the context of this design studio, we presented skill as the methods used to represent ideas, such as sketching, drafting, and model making. Technique is applied skill with purpose - in this way, technique doesn't answer, "what I am trying to do?" but begs the question "what/why/how are you doing this?" Our assertion in the design of the projects for this studio is that skill could be taught through technique, and that by giving projects where the students could understand what influence a particular technique could have on the forms being created, they would be more engaged in the understanding of technique, as applied skill, as a vehicle for exploration, and not just a means in and of itself.

The emphasis of process has clear roots in the early modern movement, and yet continues to be prevalent today. As is well known, Wassily Kandinsky, in his basic course for the Bauhaus, sought to develop a student's critical eye through the application of techniques of drawing and

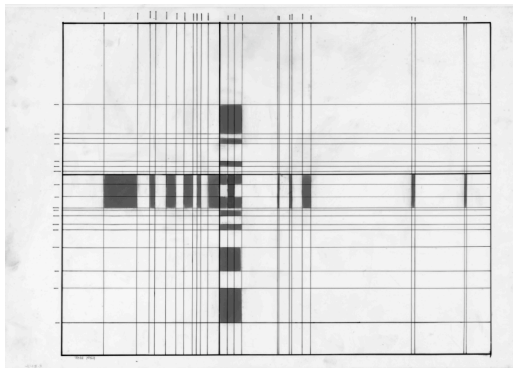


Fig. 1. Operation One: Inkblot Section

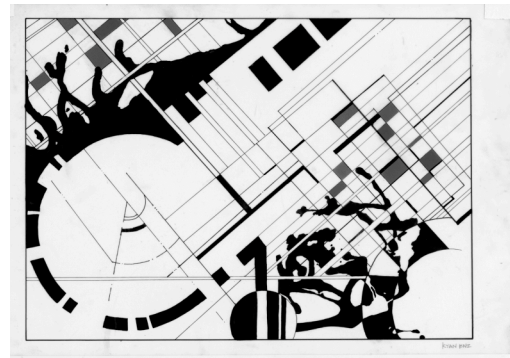


Fig. 2. Operation Four: Speculative Composite

making while also emphasizing the utmost in craft and precision.¹ For Kandinsky, the techniques of drawing, known as analytical drawing, were not simply a skill to be employed in the workshop such as mechanical or projective drawing, but a training of *simultaneously* thinking and making. “The teaching of drawing at the Bauhaus is an education in looking, precise observation, and the precise representation not of an external appearance of an object, but of constructive elements, the laws that govern the forces (=tensions) that can be discovered in given objects, and of their logical construction.”² Developing an inquisitive attitude in the student is contingent upon developing a critical eye, yet the critical eye cannot simply be learned intellectually, but is learned through the act of drawing. However, the role of the motif still plays heavily in Kandinsky’s thinking: “Generally speaking, the analytical drawings are geometrical simplifications and abstractions of the motif, and as such they have their roots in both certain nineteenth-century academic drawing techniques and in some innovations of the early modern movement.”³ This abstraction of the motif is a means of exacting the “essence” from the subject which is most clearly seen in the well known diagram of the leap of the dancer Palucca in Kandinsky’s *Point and Line to Plane*. It is for this reason that analytical drawing has been coined an “ideal” drawing. Yet, a critique of this ideal drawing is appropriate when it is employed in the design studio as a creative activity, as is exemplified by the fact that Kandinsky attempted to apply these techniques to his own paintings, but only after the painting was complete.⁴

The introduction of Kandinsky’s Basic Course at the Bauhaus is presented here to suggest one fundamental difference: the difference between the analytical and the generative. It is interesting to note that the still-lives were frequently composed by the instructor, not the students. Whereas the motif still played heavily in the composed still-lives that Kandinsky’s Analytical Drawing drew from, it was a means of understanding and expressing the “form of tensions shut up within the elements” but was not necessarily an act of composing itself. In this way, one can draw a distinction between the analytical/visual description of *composition*, versus the generative/media based development of *composing*. It must be emphasized that both understanding composition and composing, both the analytic and the generative, develop through techniques of making. Following from Kandinsky, is it possible to carry through the concepts of forces, tensions, and contrasts expressed through geometrical composition without reference to an idealized motif?

As in introduction to the studio and the sequence, each of the thirty-six students was required to come on the second day of class with ten completed “inkblot artifacts,” in which paint was applied to paper without the surface being directly contacted by the student. Inspired by Kandinsky’s description of the point, in *Point and Line to Plane*, the inkblot was used as a fluid medium devoid of any representation. Rather, the inkblot reveals the dynamic play of fluid medium and static paper plane: “The point digs itself into the plane and asserts itself for all time. Thus it presents the briefest, constant innermost assertion: short, fixed, and quickly created.”⁵

While a playful attitude in creating the inkblots was expected, the process of making the inkblot was not to be overlooked. There were three variables the students had at their disposal: the viscosity of the black tempera paint, the height and force of which the paint was poured/dropped/flung, and any tool/vessel which would distribute the paint. As these were to be a series, a methodical process and observation was emphasized. The first few drawings were to be considered experimental: they were to observe the results of how the media reacted to differing techniques, such as how droplets of paint looked when poured from one foot above the paper, and how this differed from pouring the paint from five feet. Using this knowledge, they could begin to assert a rudimentary control over the remainder of the drawings based on their observations. Students compared notes on viscosity as it quickly became apparent that paint right out of the bottle was ineffective, and surprisingly, generating a compelling inkblot was not related to the slight of hand, but required technique. For example, they were encouraged to experiment with different methods of delivering the paint to the page: pouring, dripping, flicking, and spraying,

using their fingers, brushes, stick, straws or whatever they could think of. Additionally, they were asked to visualize their motion before actually doing it, perhaps inspiring a kind of inkblot choreography. Although quick, messy, and fun, the first step introduced a spirit of play with a (somewhat) critical method.

On the second day of studio, each of the 36 students hung their 10 inkblots, covering the walls with a field of work. Unrehearsed by us, these apparently mundane artifacts were a tremendous source for discussion, which revolved around three themes: the names of the inkblots, why certain inkblots were more appealing than others, and a taxonomy of inkblots into sets of certain compositional strategies. While the requirement to name their inkblots encouraged a critical look at their inkblot, it also offered a ready means for the student to discuss their work. While there were certainly a fair share of “untitled” works, names were generated on certain groupings: after a figure of what the inkblot looked like, an emotion which the inkblot evoked, or simply the process by which it was made. To be sure, these groupings of names, including the conscious use of “untitled”, are all exemplified in art history from representational, to minimalist to conceptual art, and this was discussed as well. Of the 360 inkblots on view, students were asked to identify which was their favorite by placing a small post-it note on the inkblot. There were clear champions, and students were asked to articulate what qualities were appealing to them, introducing the importance of a vocabulary by which to discuss their work. Immediately it was obvious there was no “right” answer, but through certain results, intended or not, certain works were more compelling than others, and we all took our turn in articulating what we saw in these random events. This led to discussing visual concepts and vocabularies including order, harmony, balance, unity and contrast as well as density (clustered/expanded), boundary (contained/bleed), and tension (static/dynamic).

One of the important aspects of this class discussion was that it set the tone for a concept we would continually emphasize throughout the term: that one of the benefits of a rigorous process is that it produces not a singular solution, but a body of ideas that can be analyzed individually, or more importantly, as a group of possible solutions, the investigation of which can uncover tendencies and relationships that can be further explored. The inkblot would become the very medium for future development, generative as much as analytic. A series of techniques, we coined “operations”, were presented as different ways of looking at the inkblot, extracting the “vital forces” “dug” into the plane. In contrast to the messy fluidity of the original inkblots, the operations were to be executed with the utmost precision through ink and mylar drawings.

The first operation was intentionally prescriptive to get the students started on an equal footing. To avoid the obvious mimesis of the inkblot, a sectional grid or field was developed from two distinct areas of interest in the inkblot, one vertical or cross section, the other horizontal, or longitudinal section. Sectional thickness was to be counted as 3 contour lines parallel to cutting plane moving toward the center of the page. In contrast to the precisely drawn section lines, the thickness of the section was to be poched on the back of the mylar with charcoal, contrasting the precise with the messy. Then as now, this was easier diagrammed on the chalkboard than in words. The mylar size of 12”x18” was intentionally larger than the 11”x14” size of the paper, to introduce the idea of composition on the sheet and encourage the understanding of the role of the margin. As process was a major emphasis of the studio, students were encouraged to work in the margins as a kind of palimpsest, marking the origin of their work. It should also be noted, that the prescriptive technique allowed the student to also focus on the craft of drawing with ink on mylar for the first time. As would be the case with each of the four operations, on the next studio meeting, each drawing was hung precisely on the wall using a string as measure of level. Without exaggeration, every single drawing was exquisite, and the students could verify for themselves generating a very productive and enthusiastic atmosphere in the studio. These drawings focused discussion on field condition, center of interest, and symmetrical versus asymmetrical composition as a result of where the section was cut. As a field condition, these

drawings were visually stunning, but did not contain the singularity of action, emotion, and fluidity of the original inkblot artifact.

Operation two was likewise a prescriptive operation, but now relied on the student's craft of pen and ink drawing to carefully capture the boundary condition of the original inkblot and focus on the space between through figure/ground drawing. Although a simple step, it was also a dangerous one as was discussed: to not kill the life of the inkblot through inattentive simplification. Unlike traditional figure/ground drawings, as a result of working both sides of the media, ink on mylar with charcoal on back, the boundary stood subtly out, and character was given to the infill as a result of the charcoal. The result was that the drawings showed another layer of information besides the contrast of the forms to the surface. The bold edges of ink became hierarchically emphasized over the areas of charcoal, which became grey because of their location on the opposite sides of the sheet. Unlike the section grid operation, these drawings bore a strong resemblance to the original ink blot artifacts. We discussed the idea that some methods of analysis can reveal entirely new forms or merely emphasize the subtleties that exist within a visible condition. Both of these were shown to have the potential to be equally powerful. Furthermore, these more figural drawings were laid over the previous section grid operation. The transparency of the mylar began to imply a visual resonance between grid/field and figure/boundary suggesting a synthetic relation between drawings rather than idealizing either one.

Operation three departed from the prescriptive techniques of the previous operations requiring the student to develop a critical eye by pulling a geometric structure from the random inkblot artifact, documenting relationships of axis, datum, vector, and boundary. This operation not merely asked the students to reduce the forms in their ink blot to their essential shapes, but to examine the relationships between the forms through such criteria as tension and framing. The resulting drawing showed the visual forces and structure at work within the composition, rather than idealizing the form. It should be noted as well, that this was perhaps the most difficult of the four operations, as certain structural relationships were implied by us in introduction, but had to be discovered by the students as each inkblot was unique. Students began to see that this process of analysis could not only be applied to a singular object, but a grouping of objects with regards to their relationships in space. Many of them expressed disbelief that a drawing it took them minutes to create could yield so much information. As with the last two operations, the third operation of geometric analysis was overlaid over the previous two operations. As opposed to idealizing or favoring one drawing over the other, this introduced a concept of layering techniques which would become the focus of operation four.

Whereas the three previous operations always used the original inkblot as an underlay, the fourth operation marked a shift from analysis to generation. To explicitly remind the students that this was not about the inkblot, the students were asked to put their original inkblot artifact in a desk drawer. The goal of operation four, named speculative composite, was to create a composite of the three previous drawings, selectively bringing to the surface qualities of each of the prior operations. As each layer was brought forward into one final drawing, a technique of synthesizing and interrelating each layer was required. Students were asked to judge which combinations of elements from each layer could be effectively combined into one composition, a process of editing the disparate formal qualities of each operation into a cohesive composition. Here as before, working the front and the back of the mylar surface was critical in developing hierarchy and layering, or sense of depth, within the thinness of the mylar sheet. While each of the three previous layers needed to be present in the final operation, there did not have to be a precise registering of each of the three previous layers introducing the idea of cropping for emphasis, the relation of scales, and the registration of grid with geometry. Fragments of grids collided with curvilinear edges which responded to patterns of structure.

The composite, by utilizing all of the previous pieces, provided an excellent summation of

the process and a logical conclusion to the two-dimensional phase of this sequence. The rigor in which these assignments were executed provided insight into a design process which was non-linear, especially in that each of the drawings were exercises that did not relate to each other until the final step. Each operation was a potential avenue for ongoing exploration by themselves or in combination with other assignments. The drawings produced were not about representing an idea, or mimicking the original, but through executing a series of operations – acting upon, exerting force upon, producing effects from – were developed into a new set of works through the exploration of material and technique. The success of this synthesis appears readily in the final drawings.

It was important in presenting this process to the students that the ultimate goal was to take these steps into three-dimensional work, and not be a series of drawings for the sake of drawing. Despite the exquisite craft of the drawings, it was emphasized that these drawings were part of the process: artifacts developed from the media employed as much as being material for future development. The relief composite project was seen as a transition not only from 2-D to 3-D, but between the restricted media of the drawings into issues of tectonics and materiality of a crafted object.

To continue the focus on the final drawing and to move into three dimensions, reliefs were developed from the final drawing operation. This was a process of extrapolation and interpolation, not only adding to what was there, but filling in the gaps by critically judging the spatial implications of the lines they had drawn. The margin between the 12x18 mylar and the 11x14 window was introduced as a frame, or proscenium opening. The rigidity of the frame helped to pick the object up with multiple views, instead of simply looking down on the model placed on the desk. To further distract the student from simply building up their 2d drawing, the frame was used to suggest that their relief would have two sides, and the ability to literally look through the relief was desirable. Whereas in the previous operations three media were employed, ink, mylar, and charcoal, the reliefs were likewise restricted to three materials: basswood, chipboard, and museum board. Craft in modeling was emphasized, though there were no prescriptive techniques used, but rather, a limitation in relief thickness at 3 inches.

While the previous 2d drawing techniques could be incrementally developed as a series of layers, moving to 3d proved to be far more than an incremental step, but a giant leap. It became immediately apparent that moving from 2d to 3d was far more than a simple addition of dimension, but required a means to slowly work into three dimensions, perhaps developing more prescriptive means to introducing three dimensions.

Furthermore, as drawing operations had an inherent abstractness to them, the students had no problem regarding them as objects unto themselves and not representing something else. With the leap into models, many students began to try to make it into something: a building, a

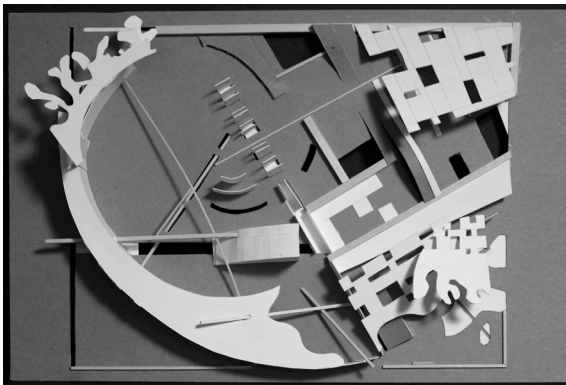


Fig. 3. Operation Five: Relief Model

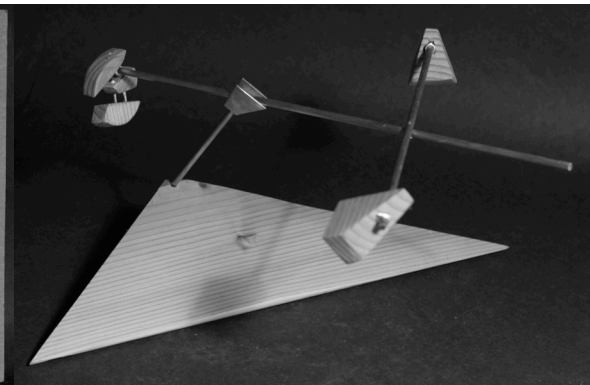


Fig. 4. Operation Six: Mobile

landscape, or a picture. Even with the relatively shallow depth of the relief, many started to assign scale to the object, visually inserting themselves within the forms of the project. This may have not been so problematic if the ultimate goal was the representation of an architectural space, but the next phase involved the creation of a full scale object, so we found ourselves trying to steer a number of students in the class away from regarding the relief model as standing for something else but a means for exploring non-representational space.

Despite the challenges in the previous operation, each of the reliefs had spectacular moments of connection, overlap, layering, etc. Students were asked to critically evaluate their reliefs searching for potentially rich moments for further development. The culminating operation was to focus on three dimensional space and material connections. While the reliefs were confined by the frame and used model based materials, the final assignment was to engage three-dimensional space through developing a mobile made of wood, metal, and/or concrete. While the original inkblot artifacts were made through applying a force, the mobile in free space, would now be subject to forces being applied to it, coming full circle.

As opposed to the direct connection between all of the previous assignments, the design of the mobile employed no strict method of translating the forms of the previous project in the current one. The mobile, by its very nature, is a structured composition: forms are joined to an armature in a way that allows the pieces and the armature to move, and this assembly is anchored by a base. In the mobile, balance is as much functional or programmatic, as it is compositional. The work that the students produced to date was not seen as a linear process resulting in a final project, but a body of work which to use as a source of inspiration and generation.

The mobile culminated a process which began with a liquid medium, and ended in a full size tectonic exploration in wood, steel and concrete. With the final operation concluding in the wood shop, the inspiration from the Bauhaus is undeniable. However, the liquid medium employed at the onset of the studio was used to emphasize the improvisational character of media rather than focus on ideal representation nor universal essence but focus on developing technique. More prescriptive techniques were introduced while introducing precise media such as ink and mylar, leading to generative and synthetic integration techniques as their skills developed.

By posing the projects in such a way, the students were asked to discover the skills inherent in the media, tools, and methods of application appropriate to the task at hand. The liquid medium of the inkblot artifact introduced them to the sensibilities of inquiry through making that we hoped to instill in the studio. The difference between how we posed the problem and a typical skills-based project, was that the subject of the project was not an end result, but the discovery of a process gained by engaging in the performance of making. The outcome of developing inquiring through technique is clearly evident in the care of the artifacts the students created, and ultimately displayed in the show that the students curated without any coaching from the two of us. In conclusion, technique is not simply the application of skills, but an application through intention, criticality, and improvisation. Technique then is not a function of thinking then making, but of thinking through making.

NOTES

1. Rainer K. Wick, *Teaching at the Bauhaus* (Stuttgart: Hatje Cantz Verlag), pg 33.
2. Clark V. Polig, *Kandinsky's Teaching at the Bauhaus* (New York: Rizzoli), pg. 110.
3. *ibid.*, pg. 124.
4. *ibid.*, pg. 128.
5. Wassily Kandinsky, *Point and Line to Plane* (New York: Dover), pg. 32.