

Disorienting Dilemmas

A Studio Model for Teaching Meaning-Making and Reflection in Action

The term meaning-making has been used in constructivist educational psychology to refer to the personal epistemology that persons create to help them to make sense of the influences, relationships and sources of knowledge in their world.¹ According to the transformative learning theory of sociologist and educator Jack Mezirow, adults interpret the meaning of their experiences through a lens of deeply held assumptions.² When students experience something that contradicts or challenges their way of negotiating the world they have to go through the transformative process of evaluating their assumptions and processes of making meaning. Mezirow called these experiences that force individuals to engage in this critical self-reflection “disorienting dilemmas”.³

In ‘Educating the Reflective Practitioner’, Prof. Donald Schön suggests that artistry is necessary for the solution of problems in professional practice that occupy the indeterminate zones of uncertainty, uniqueness, and conflict. The two traditional approaches to the teaching of artistry, however, are problematic. The first, its elimination from a curriculum based on technical rationality, is predicated on the belief that artistry is mystical and essentially unteachable. The second, its reduction to a set of procedures, has proven not to work with indeterminate phenomena that are inherently unmanageable. Schön proposes a third strategy: reflection in action, based on his observations that considerable tacit knowledge is already built into practice. By entering the condition of action and reflecting on what has been done, one can resolve “indeterminate” problems in situ by doing.⁴

It is the view of this paper that by first positioning students in a disorienting dilemma, and by second, providing a framework for ‘reflection in action’ for students to identify and use analogous architectural research elements, students develop a personal methodology and their own contextual position relative to the history of architecture.

THE DILEMMA

The most used assignment for ‘reflecting’ on what has been done in the discipline of architecture is the case study or precedent study. Today this exercise relies on multiple forms of media; but the curation of architecture in the media used to be very different. Before works of design would be included in the pages of a magazine or journal, the editorial review board juried the work for the same issues many architects and academy faculty members may recognize success relevant to the site, program, technology, design fundamentals, and theory. The architecture presented in the pages of publications were, in turn, poured over by readers (practitioners and students alike), studied, evaluated again, and considered. Publications received well-written letters in support, or critical of, the works presented, and this was the foundation of architectural history and precedent. However, how we engage the case study has dramatically shifted in the age of the internet. Well documented, the internet changed all consumption of history and precedent.

The common supposition is that promotion of architecture through imagery alone is damaging the education process of architecture students as they now think of design analysis and research

Scott Singeisen
Savannah College of Art and Design

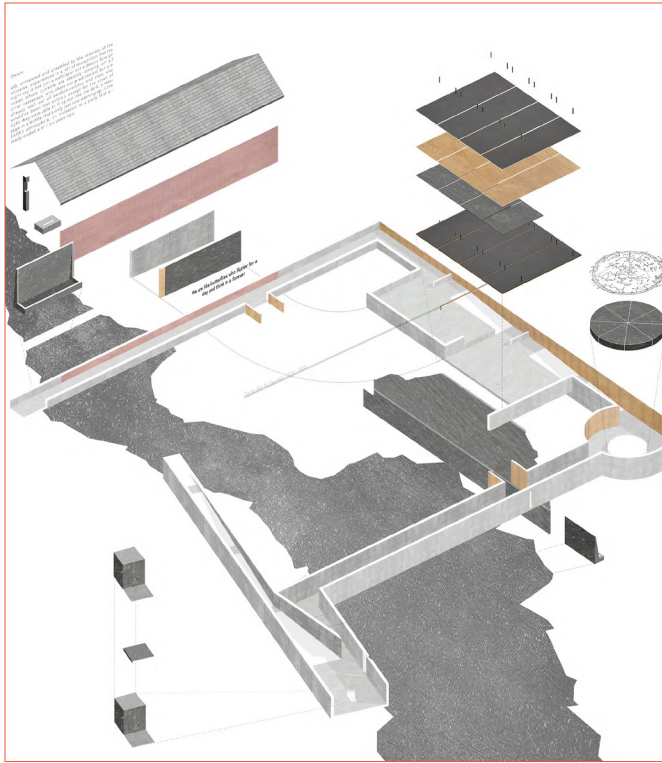


Figure 1. A chronatorium that conveys time through the changing tide and water flows of the site. (Felipe Palacio, BFA student, winter qtr/junior yr 2017)

as the process of a quick internet image search, rather than an in-depth investigation. (This could be a by-product of non-physical reading, i.e. digital blogs, web-pages versus texts. In 1998 there were 3.5 million internet web searches; presently there are 4.7 trillion search queries every day). One reason so many students fail to achieve complex learning goals may be that they rely too heavily on others' opinions about what to believe, and what they have been provided in search term queries as examples. The meaning-making capacity of self-authorship provides a basis from which to understand and learn from one's experiences; without this, students are at a loss to know how to make intentional choices about what to believe, use, or learn from.⁵

Additionally, the brain has been retrained in the internet age of research. Design analysis and research as the process of a quick internet search, rather than an in-depth investigation and reflection, permits the information to be stored in our pre-frontal cortex, that area of the brain for short term memory and quick decision making. Studies of brain activity of individuals conducting an internet search witness twice as much activity in this area of the brain – essentially telling us that our brains 'know' that we don't need to remember what we're about to find because our brain 'understands' that the information is always available later. We have trained our brains to prepare for skimming, instead of learning. What used to be an act of meaning memorization has transitioned into image memorization.

The pedagogy of the past directly influences the pedagogy of new and emerging faculty. The most relied upon approach is that

one which faculty members have been told works, institutional examples, or those means by which faculty themselves were taught. One core expectation as a result of post-modern education is the requirement of research and the incorporation of case studies and precedent examples into the process and product of student work. "Most students' (an incredible 93 percent) first instinct, when confronted with a research problem, is to turn to Google or Bing to get information rather than going to the library, and despite the best efforts of faculty to discourage its use, Wikipedia is the research resource that is used most often."⁶ If the propensity is for students to gravitate to the internet for research, what is the unintended consequence of the internet on pedagogy and research?

The architecture examples now returned through search terms are not curated; every search term returns only that for which you went searching, whereas when you research in a library, you search through association. It is the serendipity of discovery research that is the benefit of the library, whereas when you search on the internet, you search specific authors and collaborations. And so, the problem simply stated, when you assign type, you get type back. When buildings look like something, they are easy to understand, and they produce familiar metaphors.

Rather than opposing or prohibiting the student's instincts to gravitate to the internet, a jiu-jitsu methodology is employed as only non-Google-able project typologies are assigned, prohibiting internet results from which students copy/paste concepts, material strategies, and site relationships. Because the project begins with terms that have no search results, they must rely on individual self-authored design agendas. The disorienting dilemma that each of my students' face is the assigned architectural design studio project that lacks any familiarity. 'The ___torium' attempts to uncover a representational language of architecture that allows both the programmatic and typological expectations of architectural space to coexist with equal significance. For the last several years the studio has been purposefully designed in the pursuit of this agenda through ___torium styled projects, e.g. Narratorium, Chronatorium, Spectorium. Each of the projects challenges the student's assumptions and their individual process of making meaning.

To a large extent, the ___torium building type does not align with traditional programmatic elements and therefore is not discoverable on the internet. Additionally, since a ___torium is not Googleable no mental models will impede the student's personal development throughout the term and rather than attempt to summarize meanings of type, students explore the purpose of type for which the concept is used. This way the onus is on the student to identify the design goal for the project, which begins to build the outline of the research to conduct rather than image dumping of typologies through internet searches. This also informs the student's semantic network - used when one has knowledge that is best understood as a set of concepts that are related to one another. Through meaning-making, persons are "retaining, reaffirming, revising, or replacing elements of their orienting system to develop more nuanced, complex and useful systems".⁷

One reason so many students fail to achieve complex learning

goals may be that they rely too heavily on others' opinions about what to believe, and what they have been provided as examples in internet search term queries. The meaning-making capacity of self-authorship provides a basis from which to understand and learn from one's experiences; without this, students are at a loss to know how to make intentional choices about what to believe, use, or learn from.⁸

THE REFLECTION

Following the self-authored design agenda process, reflection asks students to self-identify their own interests and passions through research of five analogous architectural elements used in both the constructive critique of existing architecture, as well as the design of architecture in the multiple phases of development. Too often beginning design students are inculcated into a design process that may be too abstract – or feel arbitrary to the student – leaping over core principles into a series of prescriptive exercises to arrive at a pre-determined result. By providing design students with these analogous tools each iterative design studio is an opportunity to refine their personal interests while meeting faculty expectations and succeeding in their individual goals for the design project.

These five elements are analogous since they form a cognitive process of transferring information and/or meaning from one element to another, elevating the design work with each subsequent cycle. The elements are rhizomatic in the Deleuzian sense; after multiple cycles and iterations, the network will no longer have a clear starting point, and all five elements coalesce.

The term 'elements' is used in the methodology presented here since these are not rules nor a formula. An analogous element is a constituent part, whereas a rule is a prescribed guide for conduct or action, and a formula is a customary or set form or method allowing little room for originality. A formula is exactly what these elements attempt to suppress, by providing other manners of self-actualizing a design idea.⁹

When seeking to understand the disciplinary context of architecture, we employ separate knowledge areas in varying degrees as inspiration. The five analogous elements are identified as: Site/ Environment; Client/ Program; Material/ Construction/ Structure; History/ Theory/ Criticism; and Design Fundamentals.¹⁰ It is important to clarify that the work of architecture is not oversimplified as a singular element, but rather the method or theory of the architect may gravitate toward an element. These elements are witnessed in modes of architectural thought, e.g. Glenn Murcutt may have multiple superb examples of Site/ Environment, while Peter Eisenman excels at Design Fundamentals. This is even evident in the popularity of current explorations of structure, material, and fabrication as demonstrations of Material/ Construction/ Structure. This approach teaches the student of architecture to reflect on the critical questions necessary to understand their own design within the larger context of architectural success.

Learning the act of design is learning the act of looking at existing design critically, so when we teach design, we first teach students how to look at existing design. We can use the five elements

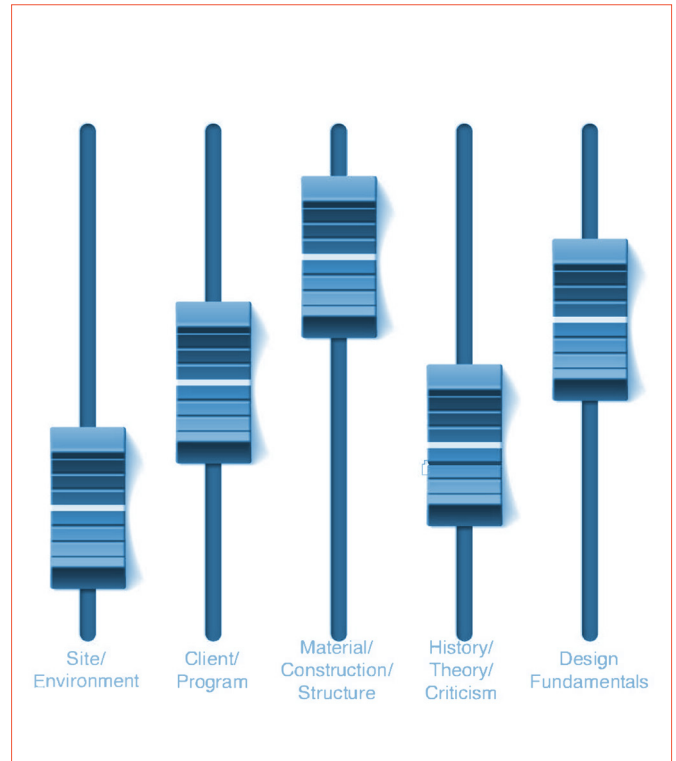


Figure 2. Five Analogous Elements. (Image by author)

in an analogous manner, understanding the totality of a work as a sum of its parts and not just the individual successful elements. This is an important point and should be reiterated: the five analogous elements process is not a ruleset for success, and therefore can have multiple interpretations. Nor does the process ensure great architecture at the outset by achieving high marks in categories and simply adding the numbers to achieve a score. The assessment process is – as all subjective assessment processes – individual and unique with varied results based on the reviewer but improving with practice and repeated application.

Each element category is discussed for its successes and failures and is assigned a position on the slider. To demonstrate we can assess the Farnsworth House by Mies van der Rohe.¹¹ Van der Rohe's understanding of the structure and material originating from his upbringing as the son of a mason is exemplified in the precise use of steel, stone, and glass. His understanding of the house with the larger context of the history of architecture, and as a critique of the house type is also exceptional. The design fundamentals of the form, hierarchy, elevated planes and order are superb. For these reasons, van der Rohe would receive high marks – or adjusted sliders on our mixing board – to reflect the success. However, as picturesque and pastoral the site is to make use of the view provided by the material choices, the site frequently floods as the river overruns the banks. Additionally, anecdotal information suggests Mrs. Farnsworth was not thrilled with van der Rohe's

Brief X Critical Reflection

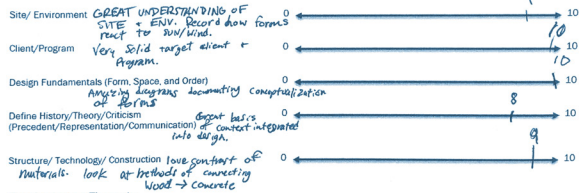
Critical Reflection

Critical reflection is a weekly self-check that uses the five analogous elements to gauge your project development. Just as we originally discussed the five analogous elements as an option to reviewing others architecture, we can also use these elements to guide our design development. Every Thursday you must complete the critical reflection, and identify the aspects and issues that require your attention over the weekend and before the next studio session.

These self-evaluations must be photographed or scanned and uploaded to the digital drop-box. In addition to your critical reflection, you must invite a studio classmate to conduct a critical reflection of your work – but without the benefit of your presence – forgoing explanations, descriptions, and verbal narrative. In this way the work must speak for the work.

Five Analogous Elements

Guest Reviewer Name: **JAM**



Your Name:

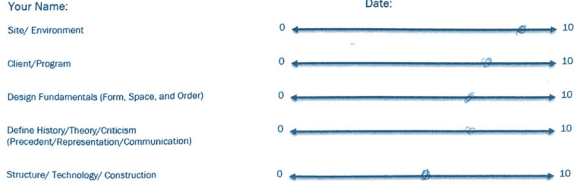


Figure 3. Brief X: Critic I Reflection

experiment on her behalf, and therefore he may receive a lower slide position in assessing these elements.

Understanding the five analogous elements relevant to the precedent study, the assessment of existing architecture, the students' personal preferences for certain elements over others, and how the elements interact, now allows students to initiate, conceptualize, and develop a design. Additionally, since the student is self-authoring the design process they can progress independently of the approval of the professor. Additionally, while each of the students may have a preference for one or two of the elements, they also begin to understand that inspiring architecture demonstrates how all five of the elements contribute to the totality of the sum. Therefore, while I encourage them to consider each of the elements as a separate slider knob, they also begin to understand that by elevating the slider in their element of interest, they must understand the influence and impact of that element on another element, thereby adjusting those sliders as well. A well-considered, rigorous and intentional design will have balance across each of the slider knobs.

Studio students are expected to conduct weekly critical self-reflections on the last day of the studio that use the five analogous elements to gauge the project development. Just as I originally discussed the five analogous elements as an option for reviewing other architecture, students can use these elements to guide design development. This self-reflection provides an outline and

identifies the aspects and issues that require attention over the weekend and before the next studio session in addition to any studio assignments. In addition to self-reflection, each student is also expected to peer review a studio peer project, and repeat peer reviews are discouraged. Peer reviews occur without the benefit of the designer present – forgoing explanations, descriptions, and verbal narrative. In this way, the work must speak for the work, and students quickly understand the role of clear representations. Each self-reflection is uploaded to a shared drive for the professor to review, permitting an awareness of progress and evaluation. This again reiterates that the student can self-motivate toward the desired outcome that was previously identified and need not wait for permission.

There are two aspects of the self-reflection that require caution, and these are also expressed to the students. First, if you or your peer have suggested that you attained a very high slider position on an element, it is encouraged that you revisit the precedents and case study examples of excellence of this element. Direct challenges of high slider marks such as, 'Have you really attained material excellence like your case study example of Scarpa?', or 'Do you think your design fundamental exercise arrives at the success of Meier's High Museum of Art that you referenced earlier on?'. These are valuable conversations that remind the student of the disciplinary context they operate within, as well as reinvigorates them to push farther.

The second cautionary consequence of self-reflection is what I term the 'new datum'. When adjusting sliders between low and high measuring development and progress, students can become fixated on achieving a high slider position, equating to success. It is at this time I remind them that if each of the sliders is in balance, and at a relatively high number, then that position is the new zero - the new datum - and their development must begin anew.

This approach teaches the student of architecture to reflect and asks the critical reflective questions necessary to understand their own preferences within the larger context of architectural success and positions their preferences for design approach and theory within the larger context of successful design. (I use the term context here to mean the parts of the discourse, not in the sense of the physical or environmental surroundings.)

With these reflection tools, as a student peruses the internet the student is looking at photographs as a result of their search term, but instead of stopping there, they are considering the more nuanced aspects of the architectural design.

Throughout, I have avoided the mention of the immeasurable in design: aesthetics and poetry. The five analogous elements in no way solve architectural design as an algorithm; exercising the five analogous elements is no guarantor of successful architecture. As an experimental field, architectural success is naturally subjective. However, subjective opinions are valid aesthetically. Research assignments that are procedural in manner without reflection in action can become a pedagogical problem.

CONCLUSION

Alan Colquhoun wrote in 'Rules, Realism and History': "...a certain scientific detachment toward our problems is essential and with it the application of the mathematical tools proper to our culture. But these tools are unable to give us ready-made solution to our problems. They only provide the framework, the context within which we operate."¹²

Faculty may be promulgating pedagogical approaches that may not fully consider how the internet has changed the context and means of student research. By adjusting pedagogical approaches to consider the role of the internet, faculty demonstrate to students how they can better utilize the resource to further their design ideas and discover their own procedural learning in the creation of the design.

No one would argue or dispute how necessary the internet has become for architecture and design education; it is now essential for architectural research and teaching. But by providing the students the tools to better utilize the internet in their on-going project research – and their research to further their own design ideas – they are working with the example, and they are able to find the procedural learning in the creation of the design. By teaching students to look for that which the search engine will not provide, we teach better manners of a critical investigation into history and precedent. Through the study of ___toriums students are taught that debilitating dilemmas should be celebrated.

Notes

1. Postman, Neil, and Charles Weingartner. *Teaching As a Subversive Activity*. First Delta Printing edition. New York: Delta, 1971.
2. Knud Illeris, "An Overview of the History of Learning Theory," *European Journal of Education* 53, no. 1 (March 1, 2018): 86–101, <https://doi.org/10.1111/ejed.12265>.
3. Jack Mezirow, *Transformative Dimensions of Adult Learning*, 1st edition (San Francisco: Jossey-Bass, 1991).
4. Donald A Schön, *Educating the Reflective Practitioner* (San Francisco; London: Jossey-Bass, 1987).
5. Marcia B Baxter Magolda and Patricia M. King, *Assessing Meaning Making and Self-Authorship: Theory, Research, and Application* (Hoboken, N.J.; San Francisco, Calif.: Wiley Periodicals, Inc. ; Jossey-Bass, 2012).
6. Hymas, "How Has The Internet Changed Education?," *SEO.com*, April 8, 2013, <https://www.seo.com/blog/how-has-the-internet-changed-education-infographic/>.
7. M. Ignelzi, "Meaning-Making in the Learning and Teaching Process," *New Directions for Teaching and Learning*, no. 82 (2000): 5–14.
8. Marcia B Baxter Magolda and Patricia M. King, *Assessing Meaning Making and Self-Authorship: Theory, Research, and Application* (Hoboken, N.J.; San Francisco, Calif.: Wiley Periodicals, Inc. ; Jossey-Bass, 2012).
9. For additional reference, Alan Colquhoun expounds on

the historical trajectory of rule sets as they relate to architecture in his 1976 essay, "Rules, Realism, and History", first published in German translation as "Regeln, Realismus und Geschichte" in the "Realismus in Archi-tecktur" issue of *Archithese*, n. 19, and later republished in English in *Essays in Architectural Criticism : Modern Architecture and Historical Change*. Cambridge, Mass.: MIT Press, 1985.

10. A further explanation of the five elements is presented here: Site/ Environment: Site is defined through individual agendas as much as it is a topographical territory. Site can include boundaries, fabric fail-ures, networks, patterns, discontinuities, and connectivity either superficial and/ or pragmatic. Environment is the relationship of the architecture to the natural conditions of the site and territory. Cli-ent/ Program: This is the area of direct impact on the user of the architecture. Does the programmatic relationship make sense to the client, does the client find the building satisfying to occupy, and does it meet the needs? Material/ Construction/ Structure: How does the material choice, the vernacular material, the construction selection and structure support or adhere to the other elements, or drive the identify and theme of the architecture? Identify the pragmatics of the system as it relates to the building type, e.g. a wide-open space demands a long span structure; a cellular arrangement can make use of smaller load bearing walls. Also considered is the sequence of operation through characteristics of that construction approach that relate to broader issues of the design, situations, or other characteristics examined in the research. History/ Theory/ Criticism: It is im-portant to understand the design proposal within the larger continu-um of architecture and better understand the theoretical position that you are taking when you propose a design. Is the design pro-posal referential? Does the architecture employ nostalgia? Is the architecture a reflection of the society at present, or a charge for society to improve in the future? Design Fundamentals: Design Fundamentals may influence architecture through consideration of or-ganization systems, circulation systems, hierarchical indicators, etc.
11. Many great texts, articles, and papers have been written on the Farnsworth House, and I will not pretend to be the aficionado; I only use the example architecture as one of many both students and faculty are familiar with. Those with a finer-grain understanding of van der Rohe, Mrs. Farnsworth, or the material technology of the structure may disagree with the assessment put forth here and are in fact encouraged to do so with use of the five analogous elements – as they are intended to do – providing the foundation for that conversation.
12. Colquhoun, Alan, Kenneth Frampton, Graham Foundation for Ad-vanced Studies in the Fine Arts, and Institute for Architecture and Urban Studies. *Essays in Architectural Criticism : Modern Architec-ture and Historical Change*. Cambridge, Mass.: MIT Press, 1985.