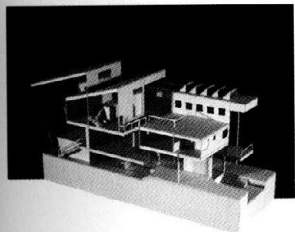


Kevin Mitchell

Learning Practice(s)

Introduction

Processes involved in learning about architecture are fundamentally different from processes associated with practice. Unfortunately many educational institutions in the Arab world fail to make the distinction and adopt approaches that are more akin to vocational training. Simulating so-called "office environments" often results in superficial approaches to design problems. A particularly common, and self-defeating approach includes providing students with a project program, asking them to do research and then develop a concept. Vague notions of what constitutes discipline-specific definitions of terms like research and concept have resulted in the object-oriented projects produced by many schools and their graduates. This continues to have dire consequences for the quality of the built environment.



Architectural education in the Arab world must be reoriented to consider how students gain the knowledge and skills required for a critical approach to practice. The approach to design studio teaching described in this paper seeks to develop analytical skills and synthetic design processes. The studio employs exemplary built projects for analytical exercises, which provides an immediate connection to both practical concerns and conceptual design strategies. It also allows students to develop tools and methodologies for attaining an understanding of architecture that transcends glossy magazine photographs and the jargon-laden text that often accompanies them. Selecting projects that have direct relevance to studio work provides a frame of reference and encourages discussions regarding the range of concerns that define a project. The analyses build confidence as students develop the necessary tools to deal with the challenges that a practitioner faces. And, perhaps more importantly, the analyses allow them to see how a critical approach to practice results from a synthesis of practical concerns and conceptual design strategies.

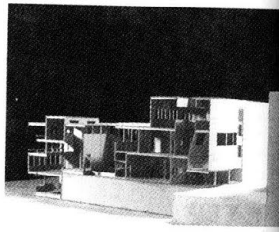
The *a la manière* method that characterized architectural education at the *École des Beaux Arts* and the pattern books

which served as sources for 19th and early 20th century practice provided definitive models that were subject to limited interpretation. In contrast, the analyses projects do not provide "answers" to questions regarding style, but rather focus questions on a range of concerns that are fundamental to architectural practice. Employing exemplary projects in studios assists in demonstrating that highly regarded practitioners aspire to a synthesis of program/use requirements, conceptual ideas, structural solutions and constructional systems. It also provides a foundation for making connections between future design studios and courses in the areas of building technology, professional practice and history/theory.

Theoretical constructs

The first body of knowledge that should be addressed in beginning design education is the existing knowledge that a student possesses, which is usually expressed in pre-conceptions or *a priori* assumptions resulting from experience that has not yet been reflected upon. While students must learn to rely on knowledge gained through sense perception and experience, they must also be challenged to reflect upon this experience in order to establish its relevance to a process of design.

Ancient Greek thought originally linked knowledge with sense perception, especially with the visual. *Theoria* refers primarily to sight and spectacles, and then metaphorically to reflection or speculation. A component of reflection is recollection or memory. The Muses of ancient Greek literature were the daughters of Zeus and Mnemosyne, the personification of memory. The Muses were not only the source of inspiration and skill; Homer asked them to grant him knowledge of the past, which he contrasted with ignorance. Memory is essential for knowledge; memory is also much more than residue accumulated unconsciously. Marcel Detienne has noted that long before Hesiod there were three Muses, Meleté, Mnémé, and Aoidé. According to Detienne, "Each name referred to an essential aspect of the poetic function. *Meleté* designated the discipline indispensable to any bardic apprentice: attention, concentration and mental exercise. *Mnémé* names the psychological function enabling recitation and improvisation. *Aoidé* is the product the epic recitation, the complete poem, the end result of *meleté* and *mnémé*." (Detienne: 1999; 41) The focused discipline and the



psychological functions enabling improvisation are as relevant for the contemporary architectural student as for the bardic apprentice.

Jacques Brunschwig elegantly articulated the relation between memory and ways of knowing as follows: "In human beings, feeling is sedimented in memory, and this process itself gives rise to experience (in the sense in which one speaks of a "person of experience," someone who has seen and retained a great deal). When experience is reflected, when it is formulated in a universal way, when it grasps the causes of its own successes, it serves as a basis for practical knowledge (*techne*) and for theoretical science (*episteme*)". (Brunschwig: 1999; 41)

One of the dangers inherent in architectural education is that the focus on transmitting discipline-specific knowledge may inadvertently devalue primary experience that is manifest in the memory of students. As Brunschwig notes, there is a connection between memory, experience, knowledge and theory. Appropriately conceived, introductions to architecture have the possibility of mediating practical knowledge and theoretical constructs in a manner that instills an analytical approach to information/knowledge and fosters the development synthetic strategies for design. The process of reflection that this requires is of value regardless of whether the knowledge is newly discovered or pre-existing in the form of memory.

From the pre-existing to the practical

House, gallery, library. These labels are often dangerous and threaten to end processes of discovery. Rather than an investigation into the nature of spaces and the activities they contain, design studio instructors are apt to provide a clearly defined program with space calculations; project formulations such as this can easily reduce architecture to a rudimentary exercise in space planning.

Although the studio process described below concludes with the design of a dwelling, students have hopefully forgotten that it was a residence that they have been engaged in designing; this process of forgetting is necessary for remembering. This does not imply that students should suspend the accumulated social, cultural and sensory experiences related to notions of "home", but rather that they should develop an

ability to reflect on and remember how built form has conditioned those experiences.

When asked to design a "bedroom", beginning students will almost always rely on their own bedroom as the model. There is certainly nothing wrong with this, unless of course it is an *unconscious* selection of that which is known and familiar at the expense of an exploration of other possibilities.

The introductory-level studio discussed in this paper begins in the bedroom, or rather the room that students sleep in. This distinction is important and informs the statement that students should not be asked to design a house, or a gallery, or a library. A process of labeling with commonly associated names can inhibit investigation, as it is never "a" house, "a" gallery, "a" library; it is "the" house (their own), "the" gallery (the one they visited in London over the summer, you know the big one by that square), "the" library (most likely the university library).

Although students have lived in their houses, visited that big gallery, or spent some time in the library, their knowledge of these spaces remain something akin to an *a priori* assumption. Empiricists like Locke and Hume would argue that *a priori* knowledge, or knowledge before the fact or prior to direct experience, is not possible and that all knowledge is essentially a *posteriori* (i.e. gained through direct experience and observation). Experience and observation have been devalued in the primary and secondary education of many students entering architectural education, which has been based on the premise that *a priori* knowledge does indeed exist and is all that exists; one needs only to employ memory without reflection.

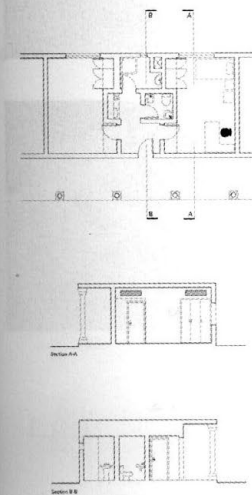
John Dewey has written that "Our progress in genuine knowledge always consists in part of the discovery of something not understood in what had previously been taken for granted as plain, obvious, matter-of-course, and in part in the use of meanings that are directly grasped without question, as instruments for getting hold of obscure, doubtful, and perplexing meanings. No object is so familiar, so obvious, so commonplace that it may not unexpectedly present, in a novel situation, some problem, and thus arouse reflection in order to understand it." (Dewey: 1991; 120) Reflection requires maintaining an awareness that would allow one to remember. One of the goals of the studio is reflection on experience in order to construct (or rather re-construct) a

body of knowledge based on first-hand experience of the lived world. Although maintained as memory, the process of reflection recasts the stored information as "new" knowledge that can inform practical activity.

André Gide has written that if he had to teach a child geography, he would begin with the plan of his student's garden. He proposed that first one should begin with a limited space, "a horizon that his own eyes can see"; then he advised projecting the student's curiosity beyond the limit of his vision. The process that Gide advocates is of great value for architecture as well as geography. To begin with something familiar, like the garden, and to develop a process that allows us to look it anew is the first step in challenging the preconceptions regarding space and form. If Gide would choose the garden for geography, I would opt for starting with the room that a student sleeps in for architecture. For Bachelard "The house, the bedroom, the garret in which we were alone, furnished the framework for an interminable dream, one that poetry alone, through the creation of a poetic work, could succeed in achieving completely. If we give their function of shelter for dreams to all these places of retreat, we may say, as I pointed out in an earlier work, that there exists for each one of us an oneiric house, a house of dream memory, that is lost in the shadow of a beyond of the real past." (Bachelard: 1994; 15) For the student, the bedroom houses memories and is so familiar that it has not been reflected upon. It is the space of return and therefore its details have not been consciously considered and committed to memory.

The first step is to ask students to reconsider their bedrooms in terms of the basic concept of measure. One of the fundamentals for a beginning architecture student is measure; the ability to observe and record a physical reality that has been present but not necessarily made quantifiable is an important tool. Derived from the Latin *mens-*, measure is the etymological core of the terms that are essential for the beginning design student: geometry, symmetry, asymmetry, meter, diameter, dimension, etc.

After the initial measurements are recorded, students represent their rooms using the basic conventions of plan, section and elevation [Fig. 1]. An introduction of conventional means of representation initiates a studio discussion of what it means to represent, or re-present, space in a two-dimensional drawing. The notion that the drawing represents a

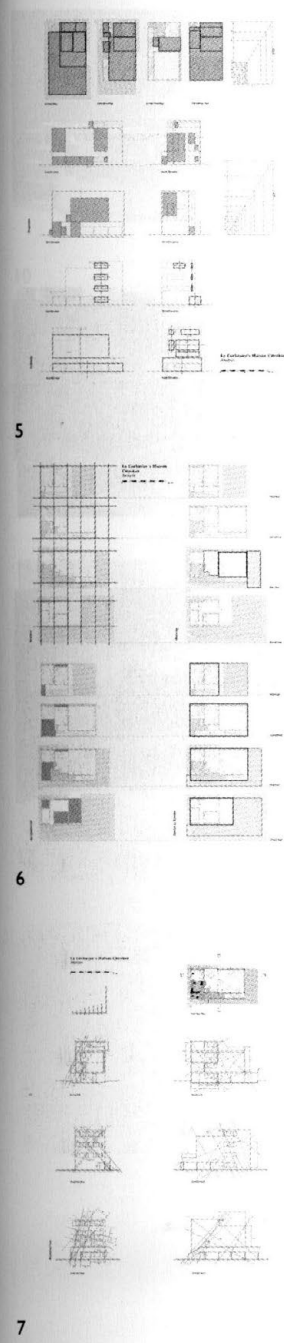
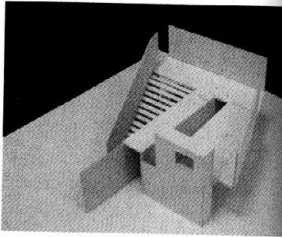
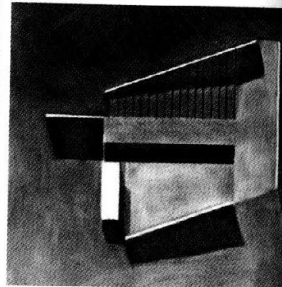
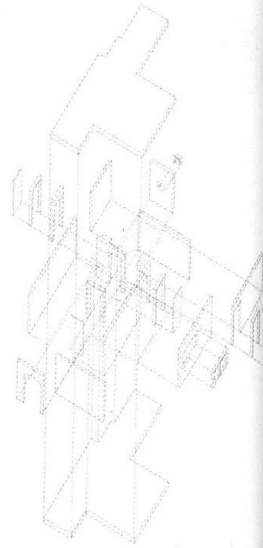


three-dimensional space that is experienced in time is complex and requires a great deal of conversation. Once the idea is established that the plan and section are two-dimensional "slices" of space that can serve to clarify spatial relationships, students move to three-dimensional representations using projected drawings that are somewhat closer to their experience of the space (at least it is recognizable as a space). The exploded axonometric is employed because it challenges notions that a three-dimensional drawing always represents "reality" (or rather represents what the students expect to see). This means of representation also serves to isolate individual elements (floor, wall, ceiling) in order to initiate a discussion of their role as space-defining elements [Fig. 2]. Freeing the elements from their original role as horizontal floors or ceilings or vertical walls is an exercise in abstraction and serves to foster debate regarding what constitutes the most basic of architectural elements, enclosure.

This process challenges the memory of the student by making the familiar strange. The isolated elements become the material for the next iteration: a structure that contains spaces for entering, reading alone, talking, listening, viewing the landscape, sitting on the grass, and exiting [Fig. 3-4]. In addition to the elements from their room (which can be cut to yield a series of smaller planes), students are given 21 steps and a quote from landscape architect Garret Eckbo:

"I spoke of three-dimensional space formation as the ultimate overall goal of the arrangement of natural and structural materials on the land; of the use of materials in shaping space on the basis of their own innate properties and characteristics, rather than by manipulation into preconceived forms that were unnatural to them". (Eckbo: 1993; 211)

This brings up the issue of shape vs. form that is fundamental to a discussion of how to re-orient students to consider the range of issues central to architecture. For the purposes of this discussion, I rely on Louis Kahn's pronouncement that "form is a realization of inseparable components". (Kahn: 1991; 288) Unlike shape, form results from the integration of a range of issues: space, structure, light, material, etc. These issues are investigated in the reconfiguration of elements derived from the elements forming the student's bedroom. This exercise represents a first attempt at constructing space that is intended to accommodate particular activities. The results of this investigation into the potential of recycled elements initiates a discussion of issues fundamental to the



architecture: circulation, route, movement, scale, relative dimensions of spaces, relation between the senses and space (i.e. what one sees, hears, touches). Students are familiar with these issues through their past experience, but they remain in the realm of memory until re-presented as "new" knowledge.

The second stage of the studio introduces a range of analytical tools in order to begin a discussion regarding how the themes explored in the initial project can lead to design strategies employed in the built environment. This activity provides another level of historical knowledge that transcends the name/date/location approach that characterizes many undergraduate-level history courses.

Students are required to redraw and analyze residential-scale works. The request to redraw is based on the assumption that one gains a more comprehensive understanding of the building through the process of drawing; one must re-cover construction lines and relationships that may not be immediately visible. This process raises questions associated with the two-dimensional representation of three-dimensional space. Students investigate how the line is employed as a fundamental tool to describe space. Reconstructed drawings become the basis for analyses of approaches to circulation routes, servant/served space, public/private space, proportion, geometry, etc. [Fig. 5-7]. An analytical approach to existing work provides students with a knowledge base and new tools with which to look at the built environment.

Abstraction is employed to move away from the concrete, complex reality of built form in order to understand the constituent aspects of an overall design strategy. It is a process of learning through *undoing*, through reconstructing the reasoning that guided decisions regarding space, form, structure, etc. The analytical processes and the fundamental aspects of space-making explored in the initial projects are expected to be synthesized in the final studio project: a dwelling space on an urban infill site.

Information regarding the project is conveyed through a series of letters from "clients" that describe the kinds of spaces that they require. No program is provided; students are expected to derive information from the letters and develop a program. As in the initial studio project, students are required to rely on their abilities to interpret what it means to accommodate a specific activity; the question is not

how one designs a bedroom, but rather how one sleeps. What is significant about sleeping and how do we design a space specific for the activity (or non-activity)? The first step is to challenge *a priori* assumptions and rely on direct experience and observation, to rethink the process associated with preparing to sleep.

How do I start? The cry of every beginning student of architecture. Students have heard much talk about the elusive "design concept" and many believe that this is a necessary prerequisite for initiating work. The notion of *thinking through doing* or *gaining knowledge through making* is foreign for students and it takes significant work to convince them that an idea is not a necessary prerequisite for action. Paul Feyerabend has noted that

"First, we have an idea, or a problem, then we act, i.e. we either speak, or build, or destroy. Yet this is certainly not the way in which small children develop... Creation of a thing, and creation plus full understanding of a correct idea of a thing, are very often parts of one and the same indivisible process and cannot be separated without bringing the process to a stop". (Feyerabend: 1988; 17)

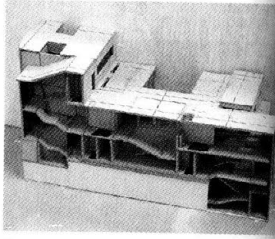
The synthetic approach that Feyerabend recounts represents an ideal that the design studio aspires to, especially the notion that it is not only creation but creation combined with complete understanding of "a correct idea of a thing". [Fig. 8-9]

The ideas, or "concepts", develop from the process and are not fixed and immutable; these ideas are subject to testing through drawing and modeling and are subject to revision, transformation and refinement. Another related preconception results from the belief that a "concept" is nothing more than an image of something else. Students believe that they must first determine what their building "looks like" and then they can "design it". Equating concept with the literal manifestation of an image is basic misconception hindering the development of conceptual ideas that can guide the design process.

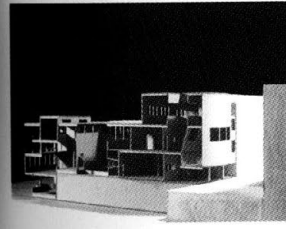
A Chinese proverb states "To hear is to forget, to see is to remember, to do is to understand". The "doing" in the architecture studio is constituted in models and drawings. The advent of digital technology and the modeling features of computer-aided design software has liberative potential; however, it often obscures attempts to teach and learn architecture.



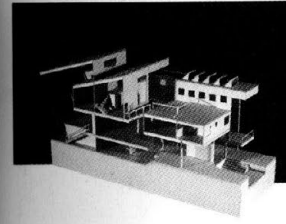
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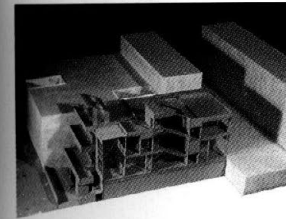
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Technology is not a panacea; computers do not distinguish between good and bad.

While architectural education must transmit the discipline-specific knowledge necessary for professional practice, it should also foster the development of approaches to information that will allow "new knowledge" to be analyzed, evaluated and integrated into the design process. An introductory-level studio that challenges *a priori* assumptions in order to establish the validity of memory and experience that has been reflected upon can provide the foundation for dealing with the demands of "new knowledge" in upper-level courses and future practical activities. [Fig. 10-12]

Conclusion

An earlier statement referred to forgetting as a precondition for remembering. Architecture students are the quite capable of forgetting, but the problem is that little is remembered. One of the most difficult challenges facing architectural education is instilling a process that allows students to distinguish between a preconception and direct sensory experience, to confront critical questions associated with *a priori* assumptions and *a posteriori* knowledge gained through direct experience and observation.

Students must be equipped with the means to observe and analyze the physical environment in order to determine the fundamental qualities of space and form. It is incumbent on architectural education to introduce and cultivate the importance of an analytical approach to the built environment and a synthetic approach to design. The focus on knowledge gained through experience and observation will necessarily challenge preconceptions regarding the built environment. Preconceptions have resulted from a failure to critically consider the built environment (and this is expected from students entering university).

The connections between memory, experience, knowledge and theory conceptualized in notions of *techné* and *epistémé* have the potential for informing architectural education. The introduction to architecture is critical and should mediate practical knowledge and theoretical constructs in a manner that instills an analytical approach to information/knowledge and fosters the development synthetic strategies for design.

The process of reflection that this requires is of value regardless of whether the knowledge is newly discovered or pre-existing in the form of memory.

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