Complaints about the poor performance of architects and the declining quality of buildings have been common in the west since the Renaissance. They intensify at the end of the eighteenth century, when architectural education became institutionalized. The failures were blamed not only on the architects but on what was thought to be the poor quality of architectural education.

To some these criticisms were irritating but only few thought they were dangerous or useless. In fact the criticisms ultimately became instrumental in generating major innovations and reforms in architectural education and facilitated the technological, functional, and ‘cultural’ modernization of buildings and soon after the French Revolution contributed to the closing down of the Académie d’Architecture, (founded in 1671) and the subsequent founding of the two most influential international educational institutions, the Ecole de Beaux Arts and the Ecole Polytechnique.

Interestingly today, despite the unquestionable unanticipated, intractable, irreversible destruction of the quality of the environment, cultural, economic, social and ecological, due to bad building and overbuilding, there are very few articulate uncompromising criticisms suggesting that architectural education is to blame for the errors designers make.

One of the reasons for this relative apathy, if not passivity, is that, despite the gravity of the environmental-architectural situation and the dynamic and aggressive construction developments of our times, calls for radical institutional change and invention in architectural education have been rare. Instead, during the last forty years, there have been many gradualist enrichments and marginal modifications, adding or removing courses. These have been important but only partly adequate in stemming the current crisis of architectural education. Why this?

Perhaps one can blame for this lack of reaction the enormous complexity of our economies and societies – not to mention the colossal vested interests and formidable private benefits - which despite their dynamism tend to be conservative towards institutional change.

Perhaps one can blame the numerous, top down university initiatives or committee interferences that based their thinking on abstract theories of learning and standard pedagogical formulas of university education ignoring the reality of architectural professional practice as well as the reality of the built environment and of the desires and aspirations of its users for a good sustainable equitable environment.

The presence in several such high level academic committees of prominent architectural practitioners has not facilitated change because most of these illustrious members of the profession were looking into the short term practical conveniences of their firms rather than long term goals of sustainable natural and social quality. In most cases they did not encourage any fundamental rethinking of the structure and operations of schools of architecture in overcoming the gap between the obsolescing institutions and the dynamic real world.
Finally, one more reason for this unresponsiveness was the realization that schools of architecture faced a gigantic problem without a solution in sight. The problem was the explosion of differentiation and specialization of architectural knowledge and division of labor in architectural practice as a result of technological, epistemological, economic, and social forces demanding a place in the curriculum (as well as equivalent quantities of people and spaces).

The situation became even more difficult when schools of architecture were asked not only to teach existing knowledge but to produce a new one through research. How could all these new demands be satisfied? (Especially when one realizes that our time is one of diminishing resources and extreme economization).

Given this impasse, some academics suggested that schools should respond by refocusing on teaching the fundamentals of the core of architectural knowledge - ignoring the fuzziness and shifting definition of such a core - leaving the rest of the new disciplines to take care of themselves outside the academic institutions in private new enterprises abandoning requirements for quality guarantees.

If on the other hand one accepts that the question which architectural education poses today, given the dynamic transformations in architectural practice and the yawning gap between budding theory and formidable reality, is not only how to accommodate exploding new knowledge together with the preservation of essential one - within a constrained number of hours, space, and budgets - but how to create an altogether novel institutional framework.

An inspiration might be derived from a most successful precedent of one of the oldest profession: the academic hospital.

The academic hospital emerged in response to the need to overcome the gap between theory and the reality of evidence-based medical practice, a need that became evident in the west around the Renaissance. As a result medical faculties were requested to teach, besides theory, at the ‘bedside of the patient’. Thus, in Leuven, the Faculty of Medicine included medical education practice in the Sint-Pieter hospital, founded in 1608, from 1426. In Uppsala University, the university hospital, Nosocomium Academicum, (founded in 1708), hosted the practical medical education of students. Nothing equivalent to the ‘bedside of the patient’ teaching was included in the early institutions of architectural education in the West, however.

Architecture was initially taught inside a kind of ‘guild’ apprentice framework both in the East and the West. The famous old masters, theorized and wrote extremely sophisticated treatises but as far as we know did not instruct their apprentices to the knowledge the treatises contained through formal ‘courses’.

The situation changed when architectural education adopted a more ‘academic’ form. Academia di San Luca (named after the patron saint of painters, St. Luke) in Rome, taught the “art di disegno”, a Vasari term, included theoretical lectures on geometry. The Académie Royale d’Architecture founded in 1671 in France was also based mainly on ex-cathedra teaching, much to the frustration of government administrators who asked for a more hands-on education. This request will be met only after the French Revolution with the founding of the École Polytéchnique.

The example was soon followed by several schools of architecture and engineering in Europe.

There was an attempt to overcome the ‘gap’ between theory and practice by assigning the morning hours to teaching ‘theory’ through lectures - on descriptive geometry, ‘esthetics’, building ‘typology’ construction, materials, interior design, or exterior city context - while the afternoon was dedicated to design exercises applying the theory taught in the morning. As theoretical specialized knowledge multiplied as well as theory becoming more ‘theoretical’ the morning-afternoon educational formula proved to be too naive and very inadequate.

A creative chaos of improvised experimentations followed in most schools of architecture around the world weakening their effectiveness. Many schools tried to make their studios more realistic through notable experiments, assigning real life problems, bringing the studios physically next to the sites, or by inviting academic experts from outside university departments or outside practitioners to consult the students. Alternatively, some schools have introduced in their curriculum a period during which a student works as an apprentice inside a professional firm. However, as it is almost universally admitted, none of these ideas bridged rationally and systematically the distance between school and reality of practice in a satisfactory way.

Returning to the precedent of the academic medical hospital, one can find in them a paradigm which might help architectural education to circumvent its impasse. Like medicine, architecture employs a huge, ever-growing highly multidisciplinary universe of knowledge, high level theories like physics, chemistry, and cognitive science, whose applications lead to very concrete and down-to-earth actions. But unlike medicine such applications are patchy.

One of the benefits of the new pedagogical approach we are suggesting is that it redeems situations that we have analyzed in our research, whereby students are taught in class new knowledge potentially valuable to their design problems but they never use it because although they have stored it in their memory, the knowledge is not instrumentally ‘accessible’ when they work. In other words they do not know that they know.


The gap between theory and practice is closed by working on real life cases, real life design commissions, as in academic hospitals where real patients and not patient dummies are treated. Like academic hospitals architecture schools of this new kind explore the origins and the nature of the problem, they link the problem to possible solutions grounded on theory as well as on evidence from prior cases. Learning occurs not only by having the student follow and assist the master as the master ‘practices’, but also through a special educational device, the academic ‘seminar’, where students and instructors follow the case together, disambiguate questions, interpret and discuss critically the problem solving process employed and the knowledge applied to solve the problem, and discuss the possibility of unprecedented experiments under the guidance of the expert professor.

In this manner the students do not learn to design by rote (or create solutions beyond constraints in a vacuum, as very
often the case in many architectural studios) but acquire creative ways of thinking, methods of analyzing real problems, and of discovering new solutions.

Surprisingly, China is one of the few countries in the world where ‘design institutes’, attached to schools of architecture that deliver products of high professional quality, already exist. They are joined by professors and a number of selected students are employed by them. However, the critical link between theory and practice typical of medical academic hospitals is not part of their function explicitly. Conceivably, the idea of a restructured school of architecture may be tried in collaboration with some of these institutes. The outcome of such an experiment, properly monitored and evaluated, may be very useful internationally towards a general transformation of architectural education so much need.

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