

Need for Paradigm Shift in Architectural Education

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Abstract: The digital revolution has fundamentally changed every aspect of life today, but the process of architectural education, developed in the industrial age, has remained largely unchanged. This has brought forth many anomalies that we need to address to make the system of current architectural education relevant today. Tweaking the system in bits & pieces is not enough, we need a paradigm shift in the process of architectural education.

The paper discusses the nature of this paradigm shift in the teaching-learning process and highlight the action program needed in all the three aspects of the process: imparting information, processing and analyzing the information and its application in the design studio.

Changed Global Scenario in the Digital World

In 1980, even before MICROSOFT came with MSDOSⁱ, Alvin Toffler, in his seminal work 'The Third wave'ⁱⁱ had predicted that the Computers and the Digital systems will take over the world, and change the world in a phenomenal manner, unimaginable for the present generation. He postulated that the first of such events had occurred when humans started agriculture in the Neolithic period roughly twelve thousand years ago, and the second one was the Industrial revolution. That is the reason he called the advent of computers 'The Third Wave'

If we take a look at the developments in all the fields of human endeavor since 1980, we cannot say the Toffler was exaggerating in any way. Computers and digital world has taken the world by storm, and the set patterns of life from the Industrial Age are now destroyed in almost every field, exactly the way Industrial revolution had destroyed the social fabric of the earlier agricultural societies everywhere in the world.

Changes in society

The last twenty-five years have seen phenomenal changes in society, with the advent of computers & the internet, which have together made inroads into almost every aspect of life. The world has come closer in terms of connectivity while it is simultaneously becoming distant as the chauvinistic & nationalistic feelings are on the rise everywhere. The world that we live in is increasingly becoming complex, with nations facing the increasing divide between rising incomes for some sections of the society coupled with the issues of survival for many, not to mention the wide gap between developing and developed nations themselves.

The stability of the socio-economic systems of the society, once taken for granted, is now being challenged everywhere

as a result of this changed scenario. The whole world is now in some kind of cultural flux, and the context in which we teach & learn architecture has also changed in ways unimaginable in the past.

Current system of Architectural Education

The current process of architectural education, however, is designed to suit the requirements of the post-industrial society. Led by Mies van de Roheⁱⁱⁱ, this format of architectural education was based on the challenges then faced by the architectural profession in the context of the new industrial society, with emphasis on function and rational thinking as the foremost parameters of architectural design.

The need for a change in the architectural education arose as the industrial society was far more complex than the earlier agricultural society, and included a number of new building types that were unheard of earlier. Starting with the industrial buildings and the office complexes, to high-rise multi-family dwellings, railway stations & airports, the government buildings in the democratic set-up which had a totally different role than the palaces of erstwhile feudal lords, hospitals & educational complexes, hotels and cinemas, stadiums and large-scale entertainment complexes and so on. The list is long but there is one thing in common – the focus of architectural design here is on the ultimate beneficiary – the user of the facility even if he/she is not the one who engaged the architect in the first place. In fact a major rhetoric of architectural philosophy of the modern architecture is based on identifying and targeting the ultimate beneficiary and user of the design.

Simultaneously, there were now a host of new services available – electricity, water supply & drainage, HVAC & others, which had to be incorporated in the design. Function, thus became a major component of the building design, overriding the aesthetic parameters of the classical architecture. So it should not really come as a surprise that Mies designed the syllabus starting with drawing skills & technology and introduced design and architectural theory in the later part of the course.

Architectural education also borrowed the industrial parameters for building design, primarily the concept of efficiency, both in the use of spaces and in the application of technology and selection of materials. This by itself was not undesirable, but architectural design is more than the sum of its parts; all the parameters related to efficiency must be applied to the design to check its feasibility, but they can never be used as a starting point of design.

Need of Paradigm shift

We are now at a phase in history where earlier wisdom is no longer sufficient for us to carry out our task as teachers. There is no point in quoting how we, as students, were far more involved and interested in the learning process, nor is there any merit in talking about sincerity and other virtues we tend to apply to ourselves. Most of us continue think of architectural education in continuity with our experience as students but forget that we were students in a different era with a different set of circumstances, which are no more relevant today.

What we need is a paradigm shift in the very process of architectural education. The digital world around us has not only changed the way we work in the design studio and architectural practice, they have made changes in the way we interact as a society - the way we receive and impart information and the way we relate to the larger context of the changing patterns of the socio-economic-political world around us.

Components of the Process of Education

The process of education can be broadly divided in two major components: first as imparting information – collection and dissemination of data and second as imparting knowledge – teaching the process of analysis and making sense of the data. In case of architectural education, a third component is equally or even more important – using this knowledge intelligently to solve the problems at hand or provide innovative solutions for future – which is an extension of the problem solving ability for new and unexpected scenarios.

Transfer of information in the agricultural society.

The task of imparting information has always been dependent on the way information is stored. In the agricultural society, the knowledge was orally transferred from one generation to other. Guru in person was expected to have the entire information needed and would transfer it through multiple recitations or practical exercises to his/ her students till the data is firmly grounded in their minds, and in many fields of human endeavor at the time, this by itself was seen as the only task of education. No analysis was required, it was enough for the student to remember established knowledge and apply it directly to the task at hand without questioning its propriety. We still have innovations in this period, but they are mostly of a nature wherein some tweaking of the original methods is done, not a fundamental change in the way solutions were sought.

If you need any proof of this in architecture, you can compare the architecture of Vitruvius^{iv} to the architecture of Palladio^v, which is separated by about 15 centuries of human civilization. I am sure there are experts in history here who would argue about the subtle differences in style, but the main

aspect of learning about architecture and applying it to design had not undergone any fundamental change during all this period.

Transfer of information in the Industrial world

The industrial revolution happened after the invention of the printing press^{vi}, so the books became the major source of data in the industrial society, but still the basic process remained the same. You would still be expected to remember the data because you would not be able to carry with you all your books all the time - it was important to mug up all the relevant information, so that you would be able to use it readily for application in the field. Books by their very nature are clumsy devices for storing information, as open book tests have proven. Unless you have already referred the books and still remember a great deal of the information, it is virtually impossible to find any information from them in the examination hall. You need to first remember the name of the book in which relevant information is stored, and then of course if the book is anything like the 'History of Architecture by Sir Bannister Fletcher'^{vii} you have a huge task before you in finding even the relevant chapter.

Imparting Information in the digital age

Computers, with their huge capacity of data processing changed the search for information into one of the easiest tasks. The availability of data in the initial stages was limited to individual organizations but when the internet connected everyone and Google came up with algorithms to search data efficiently from everywhere the world, the information explosion made referring the books a superfluous exercise.

There are critics of this widespread use of internet to search data or information, who maintain that the information may not be complete or even misleading at times. But as things stand today, this criticism would not lead the general public away from the use of internet nor would people start using the books again to get 'authentic information'. The only remedy is to provide your own version on the internet, with necessary vetting, as 'Wikipedia'^{viii} has been doing for quite some time.

With the with internet connectivity now available on smart-phones, which are actually hand-held computers that you can carry almost everywhere, it is time for us to accept the fact that students will only be using this mode of data collection unless you identify other sources of information and guide students accordingly. In my experience, this works every time. So does the scheme for collection of data from live sites - either under-construction or completed; if you lead the students there. But if we insist on following our own teachers and maintain that students should search the books or visit the sites on their own, this is not going to work in digital age – the present generation is brought up on the internet and this is the only data it will rely on unless you change to rules of the game.

Analysis of Data-Technical subjects

The issue of analysis of Data is more complex. I find it quite distressing that even today, the quantum of hand-drafting and writing assigned to students is so enormous, that there is no time to look back and analyze. That is why students are happiest when they get to copy mindlessly any submission, be it text or drawings. Most of the students show very little understanding of the huge number of drawings or text they faithfully copy from various sources, and have no time nor any curiosity to analyze its content.

This is the issue we need to address very seriously. It may be actually desirable to drastically reduce the quantum of work students do each semester. Whatever work they do, it should be identifiably different for each student and should be designed to show understanding of the subject. I must mention here that the current syllabus of the Mumbai University^{ix} is quite flexible in this matter and allows leeway to each institution about the format and content of the submission work. The problem is not the Syllabus but we ourselves, whose expectations about submissions are based on our own work as students.

In fact the earlier we discard with this system of regimented submission the better, because it helps nobody. If we wish to let the students know about the standardized content, it is already available in the book, and a digital copy can now be sent to each student directly, without any need for the students to either sketch or draw it by hand. In fact one single submission per student per semester should be enough provided we have the ingenuity of including a major part of the content of the subject in that one submission. We are already used to this idea in design, it is matter of detail to devise similar submissions for all other subjects. The drawing skills and writing skills are no longer needed by the society; it is futile to try and enforce our own prejudices of the industrial era in the current digital world. In fact the only places you see the drawing boards and writing instruments today are the schools of architecture, the architectural practice has moved far away with the world.

Data Collection & Analysis for Design

This is the most challenging aspect of the architectural education today. For technical aspects of design, the same methodology suggested above for technical subjects can be adopted, but the real problem is analyzing behavioral issues and conceptualizing design in the context of the current socio-economic-political scenario.

The problem is that the current world scenario is difficult to grasp even for informed adults. The world was far less complex when we were students. The whole of the world was divided in three distinct parts - two warring factions and a third non-aligned group. We were proud to be leaders of the third group and had ambitions to join the first. Economic

systems were simpler, politics much stable and expectations from design were also straightforward.

All these things have changed, except for our ambitions to join the first world, as it is now advancing its culture through the digital media & internet. The major problem is that news has also fragmented into multiple sources unlike the mass-scale model of earlier newspapers, radio and television. So everyone in a classroom may be getting his/her perception of the world from a different source, and it is very likely that students are totally unaware of the issues that we all think are vital in the present age, like sustainability or cultural compatibility of design in a specific context.

The problem is: where do we go from here? My argument is that we should emphasize on the value system of design, rather than the specifics, which could change from person to person. We need to understand that the fragmented system of information that is currently ruling the information highway, and its varied combinations. Students, for example, may know everything about a Hollywood movie and even its original Greek source, but would not be aware of major aspects of our own culture, unless it comes as a package of images through something like 'Bahubali'^x, however fictional and anachronistic things it holds together as one single scenario. And why blame the students? When 'Bahubali' is applauded as representing the true Andhra Culture and its director appointed as an architectural consultant for the new Capital City of Amaravati^{xi}, it is time we take a closer look at the process of dissemination of information in the digital world and devise our methodology accordingly.

Design Studio-Need to encourage dissent & seemingly absurd ideas

Last & the most important issue is accepting and encouraging other points of views than your own. I still remember the scolding I used to receive in the design studio about any out-of-the-way idea, the basis of the criticism would always be that 'it won't work in the practice'. My teachers were practicing architects and the criticism was acceptable in those days as the practice in the industrial age was stable till 1990s in India, supported by a stable set of technology & market conditions. Today, this is not only impolite for the teacher to say this in the studio, but it may also be quite inaccurate as nobody can now predict exactly what technologies will emerge in the years it takes the student to start his/her practice. Killing ideas in the name of practicality will only succeed in getting a design in conformity with the established norms, but will also simultaneously kill the very purpose of design studio today.

Encouraging dissent and seemingly absurd ideas is vitally important now as never before, and we need to be able to grasp the students' perspectives of the changing scenarios of the current world. Students shall be practicing in an era in future, about which we are also as much in dark as everyone

else. It is important that we accept this with humility and consider our role as facilitators, rather than storehouses of all knowledge.

Conclusion:

We need a paradigm shift in the way we impart knowledge, as the digital age has brought forth major changes in all aspects of life and has made many previous systems redundant.

The stereotypes of our own age are no longer applicable to this digital age and both the method of delivering content and the assignments given to the students should fundamentally change.

The nature of information & its sources have changed so drastically that we need to concentrate on the value system of design rather than its specifics.

More than any other time in history, we need to encourage dissent and support other points of views, even apparently absurd ideas in the design studios, as predicting future course of practice is becoming more and more difficult in the digital age.

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