Chapter 5

Analysing the state of Integration of History of Architecture with the Architectural Design in India

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Introduction

One of the major problems that lies in architectural education is the gap between gaining knowledge and applying it effectively in the design studios (Saghafi, 2020; Salama, 2008, 2010, 2012). Theory and studio courses are kept separately in the curriculum and this challenge is widely recognised by many architectural educators. According to Gerlenter (1988), nearly every architecture school divides its curriculum into lectures and studios. Ironically, on one hand, it is assumed that through lectures, students will gain the learnings of the basic principles and core fundamental knowledge that inform all aspects of designing. On the other hand, in design studios, it is assumed that students apply the universal information learned in lectures in order to confront a particular design problem (Gelernter, 1988). Unfortunately, however, the experience of many architectural educators suggests that this relationship does not work appropriately, since many lecture professors complain regarding the fundamental concepts that they have taught about, such as person-environment relations, do not appear in the student's design projects (Seidel, 1981), while studio instructors complain that students exhibit a lack of foundational understanding in a subject despite completing several years of lectures on the same. Gerlenter (1988) argues that several student design schemes provide evidence that aligns with these concerns. (Salama, 1998)

Even though every well-known architect & academician talks about the significance of History & even more so as History of Architecture is specified as a core subject by Council of Architecture (COA) (the regulatory body responsible for architecture education & practice in India); it finds mention in the Architectural Design Studio curriculum only twice, out of the 102 design studios being conducted at the institutes under the study. And that too in conjunction with conservation; limiting its significance & perceptibility further. The paper promulgates to make the discourse on history, more visible in the Architectural Design Studio to enhance the possible design outcomes by integrating History of Architecture in the Architectural Design Studio in a more structured way. Analysis of the B. Arch. curriculum in India was done using Qualitative Research Methods to potentially understand the different facets of Architectural Design & History of Architecture curriculum in the architectural education in India. For the purpose of the study, analysis of the B.Arch. curriculum of 11 institutes of National & State importance along with the Model curriculum specified by the All India Council for Technical Education (AICTE) & COA guidelines were done. Curriculum was analysed along with studying the existing Historiography for both the courses. This is pioneering research in the domain of History of Architecture & Architectural Design in the Indian context which is bound to have far-reaching implications in the teaching & learning of the History of Architecture theory course and the Architectural Design Studio.

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Figure 1. Figure representing Architectural Design Studio as the Core of the B.Arch. curriculum supported by other Subjects (Source: Author)

In the past two decades, the field of architecture has undergone significant transformation, yet architectural education has been slow to adapt to these changes (Mehta, 2006). In the Indian context, students undergo a rigorous training undertaking various subjects for 5-years in order to receive the B.Arch. degree. A mix of theory and practical (studio) subjects form a part of the curriculum each semester (or sometimes a year). All the subjects that are studied revolve around the core, which is Architectural Design, to support and inform the Studio. How we teach and learn Architecture in our undergraduate courses is more or less similar pan India as guided by the COA. As the analysis of the curriculum suggests, even though Architectural Design is at the core of the B. Arch. curriculum, it is difficult to see its integration with the various subjects especially the like of theory and History of Architecture.

Review of Literature

Many research articles have been published on the various aspects of History of Architecture including in higher education and a good number of them talks about incorporating History into the Design studio; to make history useful for the present and future discourse. Some of the significant ones among them are Paola Ardizzola's paper "History will teach us everything Bruno Zevi and the Innovative methodology for Future design", Amita Sinha's "Architectural History in India: A Post-colonial Perspective", Jyoti Hosagrahar's "South Asia: Looking Back, Moving Ahead- History and Modernization", Jyoti Pandey Sharma's "The Past Matters: History as a Toolkit in the Architectural Design Studio", Jamini Mehta's "Architectural education in India" and "Towards a New Pedagogy" among others. Some of the most relevant texts propagating the integration of theory (especially History) in the Studio are listed below:

Connecting theory with practice poses a modern challenge in curriculum development across higher education, particularly in design education, wherein the curriculum can act as the bridge between theoretical knowledge and applied projects. Designing the curriculum is crucial for effective educational delivery and reform, encompassing the entirety of students' educational experiences. Harmonizing various components of the curriculum stands out as a significant challenge in global architectural education. "Therefore, regular research on curriculum- including architecture education- is needed to respond to contemporary changes and challenges" (Saghafi & Sanders, 2020).

The architecture curriculum and course content require reform to achieve a balance and synergy among subjects, integrating knowledge effectively into design studio projects. Currently, architecture students struggle to establish practical and meaningful connections between auxiliary subjects and their design projects, leading to a perception that each subject operates independently without cohesion. Traditional methods of content analysis aid in identifying specific content components for learning and categorization within curricula. However, following a mechanistic paradigm, the educational approach in architecture tends to fragment into numerous disconnected components (Saghafi & Sanders, 2020).

Bruno Zevi in his book, "How to look at Architecture" emphasizes that when the architecture of the past was built, new solutions reflecting the then contemporary time were created, so it is significant that they are analysed and the processes understood and the modern ideas they delimited must be reflected upon. "It is essential to learn history of architecture by investigating what the masters of the past wanted to achieve rather than the final building just in its components."

Ardizzola states about Bruno Zevi in one of her papers, "In his vision of history as methodology of architectural practice, he draws not a philological portrait of the past, but a breeding ground for extracting "the forgotten subversive components" of it. It is a complex and engaging method because it is not only about (as one of his book titles sounds) knowing "how to look at architecture" but he sets forth new categories of judgement that enables to learn and judge, for instance, the vernacular architecture as well as contemporary architecture, the urban layout of a city but also the landscape which connotes it, in a continuous actualisation that each time becomes extremely effectual." Further she informs regarding four new architectural subjects as per Zevi's analysis, that should be included in history of architecture: "history of minor buildings, as they are important for the democratisation of history of architecture; history of city-planning, a grandiose bridge between socio-economic history and art history; history of landscape, the outcome of a symbiosis between agrarian modifications and architectural interventions and history of the extra-European architectural experience, that has to break the psychological barrier that encloses history within the European area". (Zevi, in Muntoni, 2002, p.23) (Ardizzola, 2018).

Thaisa Way in her article reaffirms that, it's evident that history is becoming increasingly central to public discourse in significant ways. Designers must not only grasp broad historical contexts but also know how to employ history as a method of inquiry. Furthermore, the absence of a humanistic education, particularly the study of history, denies students the opportunity to acquire essential skills and knowledge crucial for addressing the complexities of twenty-first-century challenges. Moreover, neglecting history in the curriculum overlooks a critical reservoir of knowledge and skills necessary for comprehending the underlying complexities of contemporary issues. This includes the ability to interrogate and comprehend the interconnected natural and cultural systems that define a place. Effective design demands a deep engagement with the often-intricate historical narratives of a site and its sense of identity. In another article, Thaisa Way argues that historical thinking is essential for preparing students to confront present and future challenges. However, she cautions against reducing history to a mere chronological catalogue of significant projects presented in digital formats. History, she asserts, is not merely a series of breakthroughs neatly sequenced; it is a mode of inquiry akin to design itself. Historical thinking prompts critical questions about how people inhabit and interact with their environments—an integral aspect of the design process (Way, 2019a, 2019b).

Jessica Ellen Sewell and Andrew Scott Johnston argue in their article that, although architectural history is typically included in accredited programs, it is every so often taught by adjunct faculty or non-specialists and is seldom integrated into the curriculum of design. They argue that within architecture schools, architectural history is predominantly viewed as presenting a vocabulary of styles and types for designers to borrow from—a "storehouse" of forms to imitate. By redefining history not merely as a repository of forms but as a subject filled with ideas rich with rooted connotations that can inspire design, historical knowledge has the potential to significantly enhance design practice. They underline that even though the studios often commence with research and analysis to begin with and in context of the issues to be explored, including the study of some historical precedents, this investigation is typically relegated to act as mere background information rather than being used actively to generate design ideas. In practice, research is often seen as a preliminary phase in the design process, rather than an ongoing investigation that continually informs the designer and their decisions. "The transition from research and analysis to design is crucial to the exploration of the course theme however, too often this transition is ill-defined, left to somehow happen by itself" (Sewell & Johnston, 2020a, 2020b).

In addition, papers of Ashraf Salama, elaborate on the different pedagogy approaches in architecture design studio. A recently concluded Teacher's Training Program by CoA-TRC on 'Teaching Indian Architectural History' (11-15 May 2020, conducted online) had varied number of experts presenting their views on the subject. Some very informative and interesting insights were shared in the 5days. It is pertinent to note here that none of them questioned the curriculum layout in principle, the fixed timelines & styles, the way in which History of Architecture course is being taught in the B.Arch. since forever. One person questioned the stylistic divisions in architecture based on religion, whereas the other person talked about integrating Architecture Design Studio with the History of Architecture course.

Krishna Kumar (former director of NCERT, even though he is talking about 'History' in school, what he says is very much appropriate for any 'History') in his article, 'Why History Matters so Much', points out that, "the history

teacher at school is often someone who has not studied history or enjoyed it. So, despite a shift in historiography, old problems continue to affect the system. One of these is the perception that history is all about wars, kings & dates. Another is the tenacity of dividing India's past into three long chunks: ancient, medieval and modern. These categories flatten out the complexity and richness of India's history, wasting the opportunity of studying it with the aim of arousing curiosity and imparting tools of inquiry" (Kumar, 2018).

Amita Sinha of University of Illinois says in her paper that, In India, architectural history has primarily focused on formal composition rules and the chronological progression of styles. Its origins trace back to the colonial era of the nineteenth century when it was shaped by an ideology that categorized India's population based on race, religion, and caste, projecting these divisions onto art and architecture. This historical narrative portrayed the past as decaying, racially and culturally divided in its accomplishments, and subordinate to the Western canon. Fergusson extensively relied on research from the Journal of the Royal Asiatic Society concerning Indian antiquities. These publications followed an empirical tradition of meticulous observation of factual details. Lacking a conceptual understanding of the architectural motives, Fergusson sought explanations through the lens of races and religions in native India. Despite this approach, Fergusson's stylistic classification system wielded significant influence, enduring to the extent that even texts written a century later have not entirely escaped its impact. It is emphasized that this enduring influence is concerning, particularly when considering its readership includes young and impressionable architecture students. The ongoing debate over Indian history underscores the need for addressing these issues thoughtfully. There is a call to integrate architectural history more deeply into design education, suggesting it could foster cultural continuity, social integration, and provide tools for comparative analysis and practical application in real-life scenarios. However, the role of history remains peripheral in design studios, where historical precedents are only occasionally considered. This reflects a broader issue: the lack of a well-defined theoretical foundation and identity in Indian architecture, which persists partly due to the predominant reliance on Western sources in historical teaching. To make history truly relevant to design pedagogy, there is a pressing need for a fundamental shift in how historical narratives are constructed and taught, ensuring they resonate more authentically with local and regional contexts (Sinha, 2014).

Jyoti Hosagrahar of University of Oregon writes in her paper that, the architectural heritage of South Asia reflects the region's immense diversity and cultural richness, intricately woven with complex and often contentious histories. However, within classroom settings, architectural history tends to be distanced from cultural, mythological, political, and societal dimensions. Instead, it is typically filtered through a scientific lens established by 19th-century British perspectives, categorized neatly into periods defined by distinct styles. Teaching architectural history in South Asia faces significant challenges rooted in overcoming colonial historiography and the enduring impacts of colonial education. These challenges include reconciling the region's multifaceted histories with visions of a technologically advanced future. Addressing these issues requires heroic perseverance amid inadequate resources and an overwhelming abundance of historical architectural and urban structures. British colonialism and its historiography have shaped the canonical understanding of South Asian architectural history, a legacy that persists in educational practices today. Despite subsequent scholarly contributions, the foundational choices made by figures like Fergusson still exert considerable influence on how South Asian architectural history is taught. Critically, architecture that can be termed indigenous, built after the 18th century and the evolution of modern architecture in the region are often overlooked in history courses. This omission implies that post-17th and 18th-century developments in the subcontinent are deemed unworthy of study. Moreover, the scant representation of 19th and 20th-century architecture in the canon creates a disconnect from both the present and deeper historical roots. The overemphasis on technical aspects of architecture further exacerbates the disconnect between people and their histories, posing a risk of overly homogenized teaching approaches that fail to capture the diverse realities of architectural heritage. This challenge is particularly acute in state university architecture schools, where curriculum constraints can lead to standardized teaching methods that may overlook the richness and complexity of South Asian architectural history (Hosagrahar, 2002).

Jyoti Pandey Sharma in her papers states that, today, given the transformation in not only how we perceive and design the built environment but also the concomitant pedagogical approaches, it is pertinent to revisit the relationship between the History(of Architecture course) and the Architectural Design(Studio).While quoting Bruno Zevi, she says, certainly, like Zevi those who teach architecture today are aware that architectural history is being taught to students training to be architects and not historians. This realisation makes it worthwhile to venture beyond exploring history for history's sake by bringing it out of the lecture room into the architectural design studio. This enables students to appreciate and experience history as a problem-solving tool that they negotiate according to their own individual design realities. She goes on to add that, the more abstract and intangible experiential aspects as well as appreciation of the building in terms of the here and now were hardly ever addressed in conventional architectural history teaching and learning and continue to remain largely neglected to this day. While

the role of the past has been explored as a subject in academia notably in Europe and the United States, there has been little debate on this matter in the Indian context (Hardy &Teymur, 1996; Hosagrahar, 2002; Sharma, 2011)

Jamini Mehta in his paper suggests that, In order to bridge the gap between technological considerations and their ethical dimensions, educational institutions should focus on equipping students with a deep understanding of their own society and the broader world. It is emphasized that the intuitive and creative work carried out in design studios must be complemented by critical thinking. This involves integrating architectural ideas more deeply into our professional training. The study of history should not merely present a sequence of facts, but rather explore the experiences connected to these facts in their development. Similarly, theory should not be viewed as abstract and unchanging principles, but rather as a framework for interpreting historical events within a system of interconnected relationships, where every element, whether enduring or fleeting, interacts with every other element. (Mehta, 2006)

As suggested through the Literature Review, History is an important tool which needs to be integrated with the Architectural Design in order to make both Design & History more relevant. Both can enrich each other. But the current state of affairs, wherein History of Architecture and Architectural design have no coherence, the study of History of Architecture is felt insignificant. Whereas, History of Architecture is an information loaded subject, if taught in conjunction with the Architectural Design, can help enrich the knowledge base of students as well as help enrich the design process. As we can understand through the Literature, the problem at hand is not just how History is being taught in the Architecture Schools but who is teaching it? What methods are being incorporated to integrate it better with the Architectural Design Studio? Historiography also needs to be reworked and there is a dire need to decolonize the History syllabus and make it more region-context.

Material and Methods

Analysis of the B. Arch. curriculum in India was done using Qualitative Research Methods & Content Analysis to potentially understand the different facets of Architectural Design & History of Architecture curriculum in the architectural education in India. For the purpose of the study, analysis of the B.Arch. curriculum of 11 institutes of National & State importance along with the Model curriculum specified by the AICTE & COA guidelines were done. The courses of Architectural Design Studio & History of Architecture along with the historiography were analysed in detail. Both the Architectural Design & History of Architecture are listed as Professional Core Courses as per the COA Minimum Standards of Architectural Education Regulations 2020.

The following steps helped towards understanding the problem in a better & holistic way:
- Review of Architectural Design Curriculum of B. Arch. course in India (in order to understand its integration with the History of Architecture theory course)
- Review of curriculum of History of Architecture theory course in B. Arch. course in India (in order to foster its integration with the Architectural Design Studio)
- Existing scenario of learnings for the study from the global context through literature

Results and Discussion

COA suggests in its document (Minimum Standards of Architectural Education, 2020), about the course that, Architectural Design is a studio-based course that synthesises knowledge acquired from various courses, serving as a cornerstone in the education and practice of architecture. The course aims to progress from traditional, linear design methods to more innovative and nonlinear approaches over time. The scale and complexity of the design projects increase progressively from lower to higher semesters. The projects begin with small single activity spaces in stage 1 (1st 6 semesters) to large urban design projects (last 4 semesters). According to the COA document, Architecture has developed within distinct cultural contexts that encompass elements such as politics, society, religion, climate, geography, and geology. This evolution is evident throughout history, both in Western contexts and in the Indian subcontinent. It is also suggested that the course of History of Architecture "may be delivered in 4- 5 semesters with specific syllabus for each semester advancing in content progressively through the semesters about the development of architectural form with reference to Technology, Style and Character, with examples from every historical style illustrating the same". This suggesting & prominence regarding 'Style & Historical Style' is at contradiction with what that new developments & published research suggests: to not compartmentalize history stylistically. Also, as History of Architecture is suggested as a subject only in the 1st stage of the study, and finds no mention whatsoever in the 2nd stage of the study; limiting its possible integration with the Architectural Design Studio further.

Examining the Architectural Design Studio curriculum

Architectural Design Studio is conducted in the B.Arch. course, starting 1st Semester itself and runs through the entire 5 years, with the exception of the Practical Training semester. Contact hours vary anywhere between 6 to 12 hours per week. The detailed Architectural Design Studio Syllabus of the 13 institutes (11 institutes +AICTE & COA suggested curriculum), under the study was studied & analysed and following are the observations from the same:

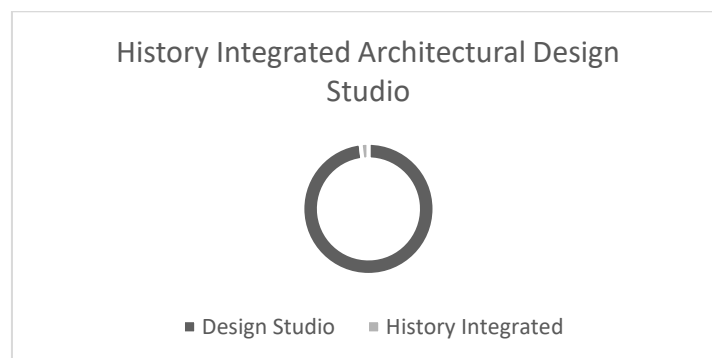**Table 1.** Architectural Design Studio Curriculum in B.Arch. in India (Source: Author)

Subject Semester	Architectural Design	Contents/ Projects
I	Basic Design*	Basic elements & principles of Design, introduction of space in 2-dimension
II	Architectural Design II	Concepts of 3rd dimension in space & anthropometry
III	Architectural Design III	Design of a small-scale project requiring designing at ground-level only along with Measured Drawing
IV	Architectural Design IV	Vernacular studies to understand the relationship between the built form and its natural environment
V	Architectural Design V	Spatial characteristics of the built environment in an urban context
VI	Architectural Design VI	advanced projects requiring deeper understanding of structure, services & technical complexity. New addition: Sustainability
VII	Architectural Design VII	design of buildings involving high level of services & advanced structural systems
VIII	Architectural Design VIII	Practical Training
IX	Architectural Design IX	Urban Design Studio
X	Architectural Design X	Thesis involves combining all the learning of the B.Arch. course into a detailed Architectural Design project
*A very few institutes, like SPA Delhi, have Architectural Design Studio run separate & parallel to the Basic Design Studio in the 1st year.		

1. Semester-I & II are mostly denoted as 'Basic Design' and even though it is named slightly differently in different schools; the course content remains the same. Semester-I deals with the introduction of basic elements and principles of design and the concept of space.
2. Semester-II introduces the concepts of 3rd dimension, anthropometry and design of a basic space mostly single unit.
3. Semester-III mostly deals with the design of a small residence and other such smaller projects in scale mostly requiring designing at ground-level only. Also, measured drawing is introduced at this level.
4. Semester-IV mostly involves the study of a vernacular settlement study to understand the local cultural milieu, local materials, construction techniques, and the built-form characteristics. Students also learn regarding the relationships that exist between the buildings and their natural environment.
5. Semester-V involves the study and understanding of spatial features of the built environment in an urban setting and projects of the scale of multifunctional public building.

6. Semester-VI incorporates more advanced projects which require deeper understanding of structure and services and technical complexity. Sustainability can be seen being introduced as an important parameter. Application of universal accessibility, complex structures, fire safety, earthquake resilience and adherence to building byelaws are required.
7. Semester-VII involves designing buildings that require extensive services, sophisticated structural systems, and large-span structures such as hospitals, hotels, etc. And understanding the intricate process of designing service-intensive buildings within dense urban environments that span multiple levels.
8. Semester-VIII is Practical Training at most of the institutes except the NITs. At NITs urban level projects are undertaken in this semester.
9. Semester-IX is the Urban Design Studio and at NITs it's the Thesis semester. AICTE Model curriculum has this semester as the Practical Training.
10. Semester-X is the Thesis at most of the institutes which involves combining all the learning of the B.Arch. course into a detailed Architectural Design project. NITs have it as the Practical training semester.

Examining the Architectural Design Studio curriculum with influence from History of Architecture

After examining the Architectural Design Studio of the 13 curriculums under the study, it was found that History finds only a slight mention in the content or objectives of the Architectural Design Studio in only 2 of the Architectural Design Studio during the entire 5-year B.Arch. degree program. It is only in these two of the Architectural Design Studios, (one at SPA Vijayawada- V semester & second one at MNIT Jaipur- VI semester) that a complete semester Architectural Design Studios is mentioned as 'History & Heritage driven'.

Figure 2. Only 2 syllabi mention History and/or Heritage in the Architectural Design Studio in the B.Arch. curriculum in India. (Source: Author)

The Architectural Design Studios & their relation with the History of Architecture:

It is in the 4th semester Architectural Design, that, SPA Delhi introduces the "study of a historic precinct of buildings planned with a characteristic relationship to the importance of the locale". The course objective in this semester is the understanding the site and its context, recognizing their importance as primary inspirations for design. The design of the environment outside the building is also stressed upon. By this time, the ancient & medieval history of the world as well as the Indian sub-continent has been already undertaken by the students in the HOA-I, II & III. HOA-IV deals with industrialisation and the changes brought in architecture thereafter. "As a culmination of manual drawing skills, the documentation of a historic building is also conducted in conjunction with HOA to display an understanding of the historical background and materials and methods of construction".

SPA Bhopal has a unique course in Semester I on Society, Culture & Architecture. This course is based on the broad field of cultural anthropology. HOA-I is introduced beginning with 2nd semester. Before the discussion of architecture/building types, the course stresses upon the discussion on geographic aspects of the materials & resources & social background. There is an effort to link the learning from history with the Design in the course overview. But its application becomes very limited as one approach the course outcomes. All it states is, 'Design buildings in the historic architectural styles', which is a very tiny intended outcome from a course (History of Architecture) which is limitless in its content and knowledge. The course overview for HOA-II states that, "learning from this subject will provide analytical tool to students to overview the historical evolution of designing and construction technique". Architecture Design-IV mentions the integration with Art appreciation, Contemporary history among other subjects.

SPA Vijayawada states in the course content of Fundamental Architecture Design Studio-II that, "the students learn application of form, space, proportion, scale, order, including golden sections and modular concepts through

examples from architectural theory and history taught in the previous semester", even though there is no History or theory course in the previous semester. Perhaps, they want to stress upon the history & theory knowledge shared through the studio itself. Architectural Design Studio (Residential: III semester) highlights History of Architecture as one of its focus areas, but with no further details. HOA-III (IV sem) deals with High and Late Medieval period (1000 CE – 1500 CE) & Architecture of the Delhi Sultanate. HOA-IV (V sem) deals with Late Medieval and early Modern architecture (15th century to 19th century) which includes European Renaissance, Development of Provincial Styles and phase of Mughal Architecture, Industrial Revolution and its impact, Art Nouveau, Arts and Crafts Movement & Early-Colonial Architecture in India.

IIT Roorkee has a Study tour for Case Studies & Photo essays in the HOA-II course. None of the Architecture Design Studios has inclusion of History into the course content. But there is a Measured Drawing Camp for 7-10 days apparently before IV semester during which measured drawings of selected heritage building/ vernacular settlement is undertaken to understand the socio- economic and cultural aspects of the place. The methods incorporated are follows: "using-field notes and measurements; Walking tour; Transcripts of interviews; Boards interpreting field data, oral histories, and primary sources; Participative research approach; Photo Survey; Sketch Study". There is a course on Vernacular architecture in the 3rd year to "develop capacity to understand, appreciate and impart knowledge of vernacular architecture of India". There is also a course on Hill architecture, details of which are not available.

IIT Kharagpur has a course named Introduction to Architecture (similar to IIT Roorkee) in semester-I that introduces famous architectural examples in India & abroad along with Concepts and Design philosophy of some leading architects. Architectural Design I & Field Study (semester-III) incorporates a field study tour of historical buildings with emphasis on measured drawing. AD-II & FS and AD-III & FS includes a field study tour for historical and modern buildings as well.AD-IV & FS (semester-VI) incorporates introduction of basic social engineering themes on community planning including historical attributes and lessons, preliminary concepts of urban economics with real life examples. Also, there is this unique activity in the curriculum of Practical Training (semester-VIII) "to document at least 25 of innovative details from personal observations, office records or field studies which may include historical as well as contemporary details".

NIT Trichy has no mention of History of Architecture in any of its Architectural Design course.

NIT Hamirpur incorporates a unique exercise in Architecture Design-II; "to study the local architecture of their respective native places and detail study of any important building/architectural monument of study area" during the summer vacation period. The main objective in AD-IV is to understand the characteristics of design on hilly terrains. This semester also has one week (1 class of 6 hours) devoted to the introduction to Measured Drawing and the Measured Drawing tour being conducted in summer vacations. Among the 2 objectives of AD-V, one is to understand the traditional construction techniques and 8 weeks is devoted to the completion of the measured drawings. It is interesting to see the inter-linkages between the subsequent Architecture Design studios here. Another interesting addition in the 6th semester is a course on Hill Architecture with the objective "to impart a comprehensive knowledge of the vernacular architecture, historical and environmental aspects for building up on the hills".

MANIT Bhopal incorporates in its 4th semester Architecture Design studio; "the understanding of vernacular architecture its' social and physical environment and methods of construction emerging out of the traditional way of life of the people in a given place". Architecture Design-VI includes a study tour during the semester as per the requirement of design studio exercise, apparently for the 1st time in the degree program.

At MNIT Jaipur, Architecture Design-II (III semester) has a Measure drawing camp which involves the examination of buildings, groups of buildings, or settlements of architectural significance, encompassing detailed drawings, constructional specifics, and materials used, to understand the context.

DCRUST Murthal has an educational tour in the IV semester to expose the students to historical, traditional & contemporary architecture and it incorporates the Measured Drawing and Documentation of a noted building.

SUPVA (now DLCSUPVA) has Architecture Design-IV themed as Vernacular Architecture that includes the study of a Vernacular settlement and a small community building design in the given context.

In the AICTE Model curriculum, none of the Architectural Design studios have a direct input from any of the History or Theory subjects. It is mentioned that History has an indirect input in the Design of I, II & III semester but the 'intent' does not reflect that integration at all.

The details of the Architectural Design Studios having History & Heritage as the main drivers of design:

SPA Vijayawada's Architecture Design Studio's (Heritage context: V semester) has two of its main objectives as "to understand Human behavioural, character of the place, including socio-cultural aspects and to sensitise the students to the specific requirements of design interventions in areas having significant built heritage characteristics". The course entails studying and comprehending the distinctive features of urban environments with notable architectural qualities. Such areas, may include old parts of Indian cities or newer areas having important architectural landmarks. Through site visits and studio exercises, students engage with the historic essence of the place thereby exploring social and cultural milieu. Students are "especially expected to apply the lessons learnt in History of Architecture and Theory of Design, through design exercises in this studio. Design philosophy evolved has to support the architectural character of the built environment and respond positively (but not necessarily mimic), to the historic context, through appropriateness of use, built form and choice of building materials. The Studio Project involves Design of a multi-functional public building in the urban setting in heritage context. Projects could also involve adaptive reuse or addition/ to an existing building having significant architectural characteristics. Students are introduced to urban development control; codes and bye laws; Special zoning guidelines related to heritage conservation; Exercises in articulation and manipulation of programmed needs, design methodology, criticism and evaluation of alternative concepts are performed". But this also ends up becoming more a Conservation exercise involving the adaptive reuse of the old heritage structures & preparing their measured drawings.

MNIT Jaipur's Architecture Design-V (VI semester) has its main objective to grasp the architectural heritage and its intricacies, exploring opportunities for adaptive reuse. This involves identifying buildings or complexes of heritage significance that could serve contemporary purposes, such as adaptive rescue, restoration, or conservation projects. Examples include heritage hotels, sites of historical interest, old havelis, royal buildings, and cenotaphs, baoris, etc are included. But the content & intent of the subject are more towards understanding the Heritage & the nuances to undertake the Measured Drawing exercises. The reflections of history or integration into an Architectural Design Exercise are not very clearly stated.

Examining the History of Architecture curriculum across institutions:

Currently the theory course of History of Architecture is studied as an allied subject just like all the other subjects in the B.Arch. curriculum in India, even though it is mentioned as a core subject. But many a subjects run in alienation, separated from each other especially History of Architecture theory course. Examining the courses of history and theory of architecture and the way knowledge is transmitted in several schools of architecture reveals that functional and human aspects are not emphasised by history and theory teachers (Salama, 1995). The priority is always given to solutions of plans and formal aspects of architecture accompanied, in some cases, by structural aspects. Several studies support this argument. (Rapoport, 1990, Schon & DeSanctis, 1986).
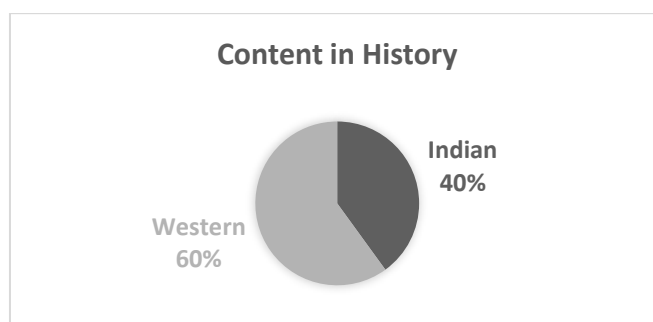
Figure 3. Content of Western & Indian History as per the analysis of content in the B.Arch. curriculum in India. (Source: Author)

The format of studying of History of Architecture is more or less similar throughout the country. An examination of the data by way of the B.Arch. Curriculum has provided more clarity. In all the institutes of National importance, contact hours for History of Architecture are 2-3 hours per week; the other regional institutes follow more or less the same pattern, with some of the new institutes (NIT Rourkela) even, omitting the course on History of Architecture from the B.Arch. syllabus altogether.

It might be well worth asking how can one perceive architecture without its history? How can one understand the evolution of architectural forms, use of materials in construction, planning of cities; if one does not study the history of architecture, at all? Through the teaching and learning of history, we are able to develop critical thinking & better decision-making in the students of architecture towards creating a more meaningful and holistic architecture.

One can assess that the pattern of History of Architecture curriculum is similar in the Institutes of National importance in India. The study content follows the below mentioned timeline:

- Prehistoric Western architecture of Egypt, Mesopotamia, Babylon, Assyria, Persia and introduction to Indus valley & Vedic-Aryan civilization followed by Roman & Greek architecture.
- Overview of Christian architecture of Europe during the Early Christian, Byzantine, Romanesque and Gothic period.
- Buddhist and Hindu temple architecture (Indo-Aryan & Dravidian)
- Islamic architecture
- Renaissance, Baroque, Rococo & Neo-classical architecture
- Industrial revolution, Art Nouveau, Art Deco, Arts & Crafts Movement
- Colonial architecture of the Indian context and the making of New Delhi
- Overview of the Modern Movement, the International Style, Post-Modern movement and Critical Regionalism
- Post-Independence architecture in India, Contemporary world architecture, Deconstruction, Globalization & Sustainability.

Whereas, ancient & medieval architecture is taught under closed components of styles & isms, contemporary architecture does not follow any of that. Even though it does follow stylistic parameters like modernism, post-modernism etc., it is majorly taught as per the individual 'star' architects and their projects. It is interesting to note here, that the curriculum carries more emphasis on the Western architects and very minimal on the Indian/South-Asian/Asian architects, which would tend to carry more regional significance.
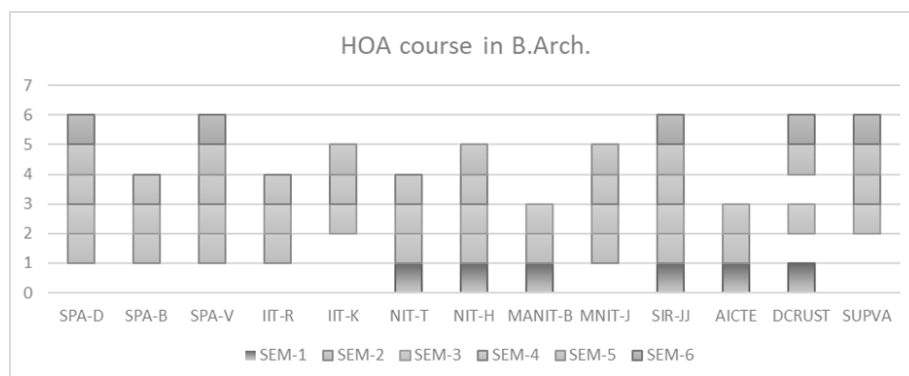
Figure 4. The History of Architecture is distributed with slight variations pan India in the B.Arch. curriculum. (Source: Author)

Bruno Zevi, Italian architect, historian, teacher, author and publisher laid the foundation to look at History with a completely new perspective with a new form of his active criticism. Zevi defended a critical methodology based on "spatial, empirical, and sensory analysis of architectural works". He gave the world a new method to look at architecture especially History of architecture. One of his books, "How to look at architecture" is very significant in this direction as he talked about breaking the 'isms' and how to 'contemporarise' the learnings of history to make them relevant for today. Ardizzola commenting on Bruno Zevi, stated that Zevi 'cannot accept anymore that there are two different criteria for modern and ancient architecture. There must be a methodology, a way of reading history of architecture which has same valid criteria of judgement for both.' (Ardizzola, 2018). There should ideally be some common parameters, as suggested by Bruno Zevi, to read & comprehend the History of Architecture.

An examination of the B.Arch. Curriculum and Syllabus as presented above permits the drawing of the following inferences:

1. It is evident that all the architecture institutes under the study, follow more or less similar pattern and format for teaching of both, History of Architecture course and Architectural Design studio.

2. Only very little variations are visible, for eg., SPA Delhi & SPA Vijayawada has the History of Architecture theory course spread over 5 semesters. The regional architecture institutes (of Haryana) have the History of Architecture theory course spread over 4 semesters. SPA Bhopal & IIT Kharagpur has the History of Architecture theory course being taught in 3 semesters.

3. Even though the History of Architecture theory course is spread between 3-5 semesters in various schools, it is interesting to note that the content still remains the same; when it is spread over 5 semesters or compressed into 3 semesters.

4. The list of suggested books and references is vast in case of Western architecture which takes up more than 60% of the content. Indian architecture or architecture of the Indian subcontinent gets very limited space and significance among the vastness of Western architecture. Western authorship could be a reason for that. Most of the available literature is researched & written by the authors of the west. The resources on the architecture or history of the places like Japan, China, Russia & a few others are completely omitted (baring one or two exceptions). The architecture of these places is hardly discussed in the History of Architecture course. Europe and America take up all the centre-stage. The list of suggested books is limited in the Indian context with most of them following a Colonial outlook on Indian architecture. Exceptionally few like Adam Hardy, talk about Indian Architecture History through the post-colonial construct. A few Indian authors have also written about the History of Indian architecture, but that is a recent phenomenon. Sadly, among them also, some follow the same colonial outlook and only a rare few have a fresh take on the subject.

5. The important reading list of History of Architecture course (Indian architecture) with references recurring most commonly in the Institutes undertaken in the study can be understood clearly through the below figure, wherein Western Authors take up most of the 'books: to be referred for the study'. In the last few years, a positive change can be seen wherein Indian authors have started to write about the Indian history, but most of them on Contemporary History. It is still a long way to go to bring in more regional perspectives into the academics especially in the context of Architectural Design & History of Architecture theory course.
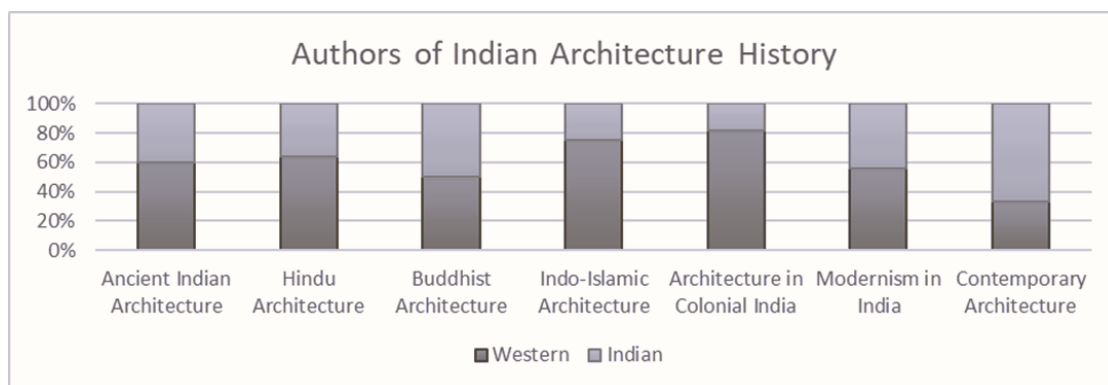
Figure 5. A large cannon of Western Authors still dominates the History of Architecture course being taught in India. (Source: Author)

Jessica Ellen Sewell and Andrew Scott Johnston argue in their article that, "By using history, not as a repository of forms, but as a world of ideas, of embedded meanings that can serve as generators of design, history can serve to enrich design practice. They add, while studio classes often begin with a module of research and analysis into the themes and problems that will be explored in the studio, including historical precedents, this research is used as background information, not as a generator of design."(Sewell & Johnston, 2020a, 2020b) Amita Sinha says in her paper that, "Architectural history in India for most part has limited itself to formal rules of composition and chronology of styles."(Sinha, 2014) Jyoti Hosagrahar writes in her paper that, "the historic architecture of South Asia is as rich and diverse as the region and its people. Webs of meaning bind together their complex, polemical histories. Architectural history in the classroom, however, is removed from culture, mythology, politics, and society, filtered through the scientific lens of the nineteenth century British, and sorted into tidy periods with distinct styles."(Hosagrahar, 2002) Jyoti Pandey Sharma in her paper states that, "today, given the transformation in not only how we perceive and design the built environment but also the concomitant pedagogical approaches, it is pertinent to revisit the relationship between the History (of Architecture course) and the Architectural Design (Studio). This realisation makes it worthwhile to venture beyond exploring history for history's sake by bringing it out of the lecture room into the architectural design studio. This enables students to appreciate and experience history as a problem-solving tool that they negotiate according to their own individual design realities." (Sharma Jyoti Pandey, 2011)

While the role of the past has been explored as a subject in academia notably in Europe and the United States, there has been little debate on this matter in the Indian context (Hardy &Teymur, 1996; Hosagrahar, 2002; Sharma, 2011). It is evident that there is a need to redefine the teaching and learning of the HOA course in the B.Arch. curriculum in India for its role in the design process in the Architectural Design Studio.

Conclusion

The research concludes with insights into the challenges and opportunities associated with integrating these two essential components of architectural education.

It is interesting to note that barring a few exceptions, there is very minimal integration between the various subjects in the B.Arch. curriculum specifically History of Architecture & Architectural Design Studio, as seen in the various Institutes of National and State importance in India. In writing, almost all the curriculums of the various institutes talk about the integration of all the subjects taught throughout the semester into the Architectural Design Studio especially the Council of Architecture Guidelines. However, looking at the details of the subject syllabi revealed that hardly any integration is happening in principle. Literature suggests that there is a lot that one can learn from History. In this case, specifically, History of Architecture theory course is overloaded with information & knowledge that has not been utilised into the theory & practice. History of Architecture should be well integrated into the Architectural Design Studio; only then can it add meaning to the Design. In the absence of History & Theory, the design lacks concept and thought which is the soul of any good design.

The 'sense of history' is very significant. Studying history is much more than just memorisation of dates. History is being taught in most of the schools in the same manner following the historic timelines to the current times. While a rare few integrate History of Architecture into the Architectural Design the rest just teach it for the sake of it with no relation into the present. It is pertinent to note here that the fact, 'History repeats itself' resonates thoroughly. We need to learn from the History. History of Architecture is taught in the schools of architecture, following the timelines, providing information about what happened when, from antiquity to the present. This method simply anchors the history in the past and there is not much, which one understands as a takeaway from all this information-loaded-subject. The takeaway for architecture design studio is largely missing.

There are multiple challenges in integrating History of Architecture and Architectural Design Studio. The research suggests curriculum to be one of the most important factors. There is a dire need to rework the curriculum to make the learning of the other subjects especially Theory & History, to be more evident in the Architectural Design Studio Exercises. The other significant that came across through the study is the De-colonising of the syllabus, especially History & Theory, to include more relevant & appropriate information on Indian as well as South-Asian histories, rather than just looking at the West for examples & inspiration. Another significant observation was, to try & bridge the spilt between the Theory (or survey) courses & the Architectural Design Studio. Perhaps, its about time to bring in 'critical thinking' into the theory courses & research into the Studios.

That the past has a place in the teaching of architecture has been articulated by numerous research on the subject, in order to bring to the forefront various aspects of architecture of the past so that they can be meaningfully incorporated in the present via the Architectural Design Studio. While some teachers of History of Architecture and Architectural Design may already be doing the integration out of their own interests but there is no prescribed framework that exists for the integration. Further research in the domain may provide better insights into the same.

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Conflict of Interests

The authors declare no conflict of interest.

References

AICTE, (2019). Model Curriculum for Bachelor of Architecture (B. Arch.), New Delhi

Ardizzola, P. (2018). *HISTORY WILL TEACH US EVERYTHING BRUNO ZEVI AND THE INNOVATIVE METHODOLOGY FOR FUTURE DESIGN*. https://doi.org/10.4399/97888255150531

B.Arch. Curriculum *of: SPA Delhi, SPA Bhopal, SPA Vijayawada, IIT Roorkee, IIT Kharagpur, NIT Trichy, NIT Hamirpur, MANIT Bhopal, MNIT Jaipur, Sir JJ College of Architecture Mumbai, DoA DCRUST Murthal, DoPA DLCSUPVA Rohtak and CEPT Ahmedabad.*

COA, (2020). Council of Architecture (Minimum Standards of Architectural Education) Regulations, Gazzette Notification

FA Pedagogy, CEPT University, Ahmedabad, 2012, http://creativecommons.org/licenses/by-ncnd/3.0/

Gelernter, M. (1988). Reconciling Lectures and Studios. *Journal of Architectural Education*, *41*(2). https://doi.org/10.1080/10464883.1988.10758475

Hosagrahar, J. (2002). *Looking Back, Moving Ahead-History and Modernization Institutional Context: The Birth and Development of Architecture Schools.*

Interview: *Adam Hardy with KT Ravindran*

Kumar, K. (2019). *Why history matters so much_The Hindu_.* https://mail.google.com/mail/u/0/?ui=2&ik=be7eaadfc4&jsver=CH…iew=pt&search=inbox&th=1656d0e5 5143943d&siml=1656d0e55143943dhttps://www.thehindu.com/opinion/lead/why-history-matters-so-much/article24763484.ece

Mehta, J. (2001). Towards a New Pedagogy, New Delhi, India, 2001, _ Aζ South Asia_ architexturez.net

Mehta, J. (2006). Architectural Education in India, an Overview _ Aζ South Asia_architexturez.net

Saghafi, M. R. (2020). Teaching strategies for linking knowledge acquisition and application in the architectural design studio. *Archnet-IJAR*, *15*(2). https://doi.org/10.1108/ARCH-01-2020-0005

Saghafi, M. R., & Sanders, P. (2020). A Comparison Study of Integrating Theoretical and Practical Components of the Architecture Education Curriculum in Iran and Australia. *Int. J. Architect. Eng. Urban Plan*, *30*(2).

Salama, A. M. (1995)_New_Trends_in_Architectural_Education_ Designing_the Design Studio, UPP, USA

Salama, A. M. (1998). *A New Paradigm in Architectural Pedagogy: Integrating Environment-Behavior Studies into Architectural Education Teaching Practices*. https://www.researchgate.net/publication/313853147

Salama, A. M. (2008). A Theory for Integrating Knowledge in Architectural Design Education. *Archnet-IJAR: International Journal of Architectural Research*, *2*.

Salama, A. M. (2010). Delivering Theory Courses in Architecture: Inquiry Based, Active, and Experiential Learning Integrated. *Archnet-IJAR: International Journal of Architectural Research*, *4*(2–3).

Salama, A. M. (2012). Knowledge and Design: People-Environment Research for Responsive Pedagogy and Practice. *Procedia - Social and Behavioral Sciences*, *49*. https://doi.org/10.1016/j.sbspro.2012.07.002

Schon, D. A., & DeSanctis, V. (1986). The Reflective Practitioner: How Professionals Think in Action. *The Journal of Continuing Higher Education*, *34*(3). https://doi.org/10.1080/07377366.1986.10401080

Seidel, A. D. (1981). Underutilized Research: Researchers' and Decision Makers' Conceptions of Information Quality. *Knowledge*, *3*(2). https://doi.org/10.1177/107554708100300207

Sewell, J. E., & Johnston, A. S. (2020a). *Rethinking history in design education through the history of materials (Part 1)*. https://www.platformspace.net/home/rethinking-history-in-design-education-through-the-

Sewell, J. E., & Johnston, A. S. (2020b). *Rethinking History in Design Education through the History of Materials (Part 2)*. https://www.getty.edu/art/collection/objects/74770/william-henry-jackson-quarrying-granite-for-mormon-

Sharma Jyoti Pandey. (2011). *History as a Tool Kit in Architecture_Leap Conference Paper*, Maharaja Agrasen University, Baddi, HP

Sinha, A. (2014). *Architectural History in India: A Post-Colonial Perspective Envisioning a Resilient Cultural Landscape: Ghats on the Ganga, Varanasi, India View project*. https://www.researchgate.net/publication/280051731

Way, T. (2019a), *PLATFORM_ Why History for Designers_ (Part 1), platformspace.net*

Way, T. (2019b), *PLATFORM_ Why History for Designers_ (Part 2), platformspace.net*

Way, T. , Eigen Edward A., Giannetto Raffaella F., (5 March 2021), *Think like a Historian, Imagine like a Designer: A Conversation on Landscape History and Design Education*

Workshop (online, 2020): *Teaching Indian Architectural History, CoA-TRC, 11-15 May 2020*