Research Article

Review Of Policy Frameworks In Architectural Education In India

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ARTICLE INFO	ABSTRACT
	Architectural education in India is guided and regulated by various institutions & policy frameworks. The overall quality of education in India in context of curriculum, pedagogical approaches, assessment methods and incorporation of contemporary technological advancements have always been dependent on various policies and frameworks set by different government institutions from time to time. The authors aim to explore the key reforms introduced by the New Education Policy 2020, COA Minimum Standards of Architectural Education, AICTE and Haryana Education Policy encompassing changes in curriculum design, assessment methods, teacher education, and governance structure in general and specifically in the context to architecture education through critical analysis & review of secondary literature. The study underscores a 'paradigm shift' in the education system and calls for reforms with relation to critical thinking, integration, enquiry-driven approach and becoming more experiential. The education policies also stress upon innovative and new teaching-learning methods to be developed for the new-age learning. These shifts shall be driven by a renewed focus on empowering faculty and fostering dynamic and alternate pedagogical practices to enhance and appropriate the experience of learning architecture. **Keywords:** Education Policy, Architectural Education, Architecture Education, Policy Frameworks, NEP Significance for Architecture

1. Introduction

"Architectural Education is at the crossroads" (Tzonis, 2014)
Architectural education and practice in India are guided & regulated by the Council of Architecture (COA) (established 1972). Since beginning, architectural education has been very practical based as well as case study oriented. If we look at most of the graduate courses being taught in India, they are extremely theory based, will very little or no hands-on work. In that manner, architectural education is advantaged, as it carries the benefits of theory, practical and even internship, culminating in an entire project based holistic graduation Thesis project. Policy frameworks play a significant role in defining the education system, setting up parameters for the imparting of education, and helping develop curriculums based on the vision documents that the policy frameworks hold within them.

Different countries adopt different education systems by considering the tradition and culture and adopt different stages during their life cycle at school and college education levels to make it effective (Aithal & Aithal, 2020). A policy framework is a strategic guide that outlines procedures, goals, and principles for developing, revising, and maintaining policies. It serves as a structured approach to ensure consistency, accountability, and effective decision-making in policy development and implementation (Lakhno, 2023). A policy framework plays a crucial role in an organization by providing a structured approach to policy development, implementation, monitoring, and review. Such consistency helps people understand their roles and responsibilities more clearly. The frameworks should allow for regular reviews and updates, ensuring that

policies remain relevant and effective. Having clear policies reduces ambiguity and helps people know about the best practices and what is expected of them and the work they are doing. The policy frameworks should ensure effective communication channels to provide structure, consistency, and clarity, enabling the various institutes to adhere to its goals and values alongside providing flexibility to accommodate each institute's unique characteristics. A policy framework thus serves as a foundational guide, ensuring clarity and coherence in policy development and implementation (Lakhno, 2023).

This study critically examines various National and State-level Policy Frameworks in the domain of education in India to understand their underpinnings on the architectural education in India, to help pave a way forward for the changes required in architectural education.

2. Methodology

This study meticulously uses critical analysis & review to examine the various secondary sources especially policy documents, academic research, and expert opinions. Recent changes in policies of New Education Policy 2020, COA Minimum Standards of Architectural Education 2020 and AICTE model curriculum for Architecture 2019 were examined to analyse the policy frameworks in the context of the current times. Policies which came prior to these new ones were also examined to analyse the progression & evolution that they brought in. Education policy of Haryana was also studied and analysed in detail so as to understand the first-hand changes it led to; as both the authors are working in the same state yet different state government funded universities. The authors aim to explore the key reforms introduced by the policies, encompassing changes in curriculum design, assessment methods, teacher education, and governance structure in general and specifically in the context to architecture education.

2. Review of Literature

"A profession is distinguished by the quality of its practitioners." Christopher Charles Benninger
India has some of the world's truly urban schools of architecture, and it must take the lead in inventing a truly urban architectural curriculum. Urbanism must be woven into the curriculum of architecture, and be made a thread in the studios, and subject matter in academic course (Benninger, 2014).

It is significant to look at the role of COA for the current state of architecture education in India which points towards the increasingly chaotic situation. We need to rethink architecture education because of the changes in technology in construction, design, detailing and the way information is processed and distributed. There is a need to bridge the gap between teaching – learning process and the work done in practice (Aditi et al., 2022). In the mid 90's, started the degradation of the profession, when the Ministry of Human Resource Development now known as the Ministry of Education, issued a notice which did not allow the faculty of architecture to involve in professional practice (Aditi et al., 2022). This led to a substantial decrease in the people who were passionate about teaching & who were keen to take out time from their practice and go on to inspiring young students through their regular interactions at the institutes. The private practice has always been financially a better work option as teaching has never been that well paying a work option. And more & more people, who had good architectural practices were made to leave the part-time academics that they were keen to undertake. This has been a huge loss to the students as practice & academics helped fuel each other & heightened critical design studio discussions.

Architecture education and practice should transform and develop to accommodate the needs of the strong foundation for an Atmanirbhar Bharat. Architecture education should also be internationally validated with direct evidence of student learning. There should be a paradigm shift in the design of education towards developing professionals with the ability to understand and use local knowledge, traditional knowledge, and emerging technologies while being cognizant of critical issues such as climate change. Architectural practice requires becoming financially competitive and technologically challenging to keep up with the international standards of design and delivery (Varkey et al., n.d.). An architecture which celebrates the spirit of India while competing globally will lead the way to an Atmanirbhar Indian Architecture.

Charter for Architectural Education states that Architectural Education constitutes some of the most significant environmental and professional challenges of the contemporary world and that the educators must prepare architects to formulate new solutions for the present and the future. Architectural education is an amalgamation of myriad of studies, extending from materials, climatology, drafting, sketching, design, and services to history, sociology, and philosophy. An education which is embedded in the true Indian heritages and inculcating the need of the 21st century can pave a way forward (Architecture Education, The UNESCO-UIA).

Figure 1. *List from COA showing the growth expurt in number of architecture colleges in India*
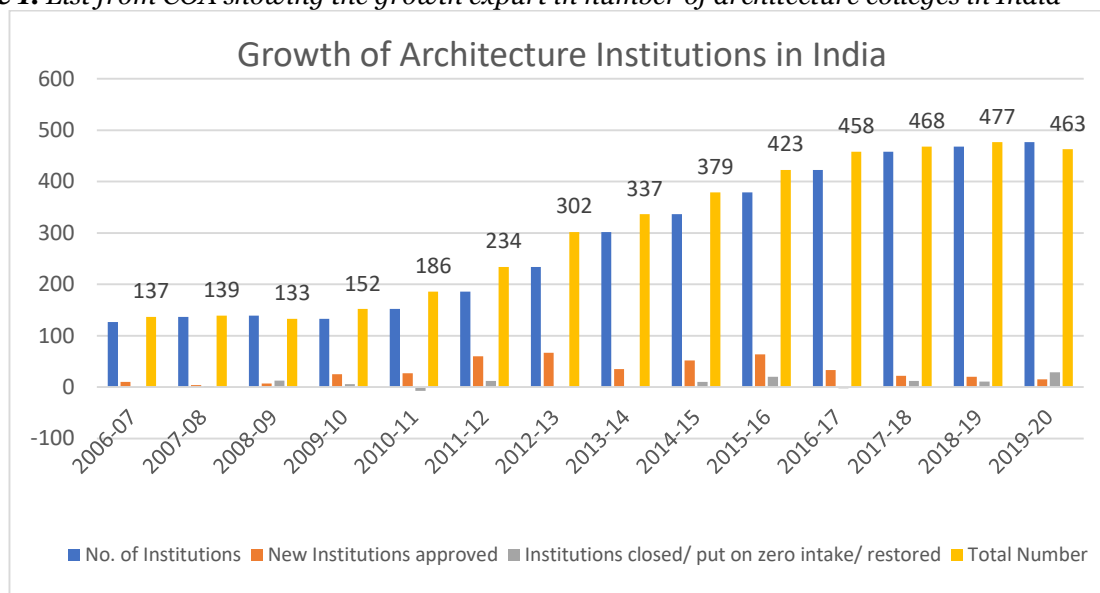
There has been a substantial growth (Fig.1) in the new institutions approved since 2009 onwards (except in 2013) with a gradual decline since 2016 onwards while the total number of architecture institutes being on a consistent rise (as can be seen in the growth curve). Intake in various institutes has also increased from 40 to 80 to 120, making the education quantity oriented rather than being quality oriented. (Aditi et al., 2022) Vacant seats in colleges are seen as a major cause of concern as this does not indicate a healthy institution. Large vacancy rates, to an extent of almost 30%, create an economic pressure on the institution and usually results in hiring less faculty members, or part-time teachers, who do not give sufficient time to the institution, or who do not have an academic inclination. This compromise is seen as one of the major reasons for deterioration in overall architectural educational standards (COA perspective plan 2020). Currently there are 419[1] architecture institutes, which shows a clear decline in the number of architecture colleges in the country especially since Covid-19 period. Whereas, there has been a significant growth in the number of diploma courses. As per the COA data, since 2021, around 139 Architectural Diploma courses in Polytechnics have commenced pan-India. It is also a concern that with a single department in a college, the architectural institutions are expensive to run and operate, in comparison with engineering colleges which typically have at least four departments. Permitting the introduction of B.Sc. programmes in Architecture, and similar degree programs in Interior Design, Fine Arts, Animation, Product Design, Urban Planning etc. under the same umbrella may result in a good synergy. These courses, are inter-related disciplines and offer opportunities for growth to the institutions in emerging fields. The COA hence suggests to bring in diversity in academic programs to make them more relevant to the current times and bring in more flexibility in the architectural education. (COA perspective plan 2020)

4. Results & Discussion: Policy Frameworks

National and State level Policy Frameworks in the domain of education in India were critically analysed to understand their underpinnings on the architectural education in India. The list of the Policy Frameworks under the study is as stated below:
- COA Minimum Standards of Architectural Education 1983
- National Policy on Education 1986 (modified 1992)
- Education Policy Haryana 2000
- AICTE policy on examination reforms 2018
- AICTE model curriculum for architecture 2019
- New Education Policy 2020
- COA Minimum Standards of Architectural Education 2020
- COA Perspective Plan for Growth of Architectural Education 2020

These policies have significantly shaped India's education landscape, addressing diverse aspects of access, quality, and cultural preservation. The important aspects from each one of these some of which are of significance to architectural education are discussed below:

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[1] There is a sheer inconsistency in the data of the actual number of architectural institutes. On the COA's official website, wherein it shows data updated in 2024. In 3 different files, 3 different numbers of total institutes are shown as 471, 381 and 406. If we take the average, it comes out to be around 419 institutes.

4.1 COA Minimum Standards of Architectural Education 1983 (AE 1983)

The COA Minimum Standards of Architectural Education is a gazetted document. It carries basic information regarding various aspects related to architectural education.

The notification also elaborates upon Subjects of Examination and describes the various subjects in the Stage I- Basic Course (first 3 years of the study) and Stage-II (final 2 years of the study). It is significant to note that one semester is taken as a time period of approximately 16 working weeks and it also stated that the completion of first stage shall not qualify candidates for registration under the Architects Act, 1972.

Interestingly, 'brief description of the subjects' listed in the Stage-II of the course, does not include even a single reference to History or Theory. When the Council of Architecture, shows such apathy to something so significant and inherent in Architecture; the institutes, administrations, faculty & students are bound to be even more nonchalant to the subjects of History & Theory.

4.2 National Policy on Education 1986 (modified 1992) (NPE 1986)

The NPE 1986 came about as a 'national policy' for the first time. Prior to this various commissions under the 5-year plans had provided the guidelines for education in the country. The policy was modified soon after in 1992. And the version that is now available to open access as per the government documents is the one modified in 1992. Some of the key aspects of the NPE 1986 include, adapting the 10+2+3 structure of the education throughout the nation, which helped in bringing a uniformity across all the states. The policy also emphasised upon education for all including women, people belonging to SC & ST and minorities among others. The policy also lays great significance on continuing education, distance learning and adult education to facilitate the people across the country. The policy put into consideration the early childhood care as well as education of the handicapped (now termed as differently-abled or specially-abled). Technical and management education were also aimed to be given special importance. Different resources like Jawahar Rojgar Yojna were also attached with the policy to enhance the outreach. It provided a substantial & holistic framework to be implemented across the country.

The dualities of a country as diverse & large as India, were visible in the policy document as well; on one side mere basics of 'operation blackboard' were being talked about wherein basic facilities were to be provided in the government primary schools, and on the other, emphasis on technical & management courses was laid which would equip & help provide knowledge appropriate to meet the challenges of the 21st century. Architecture education has always had to bear the brunt, for neither is it completely technical (like engineering) and nor is it completely art-based (like visual arts), for when it was put alongside engineering institutes, its humanities based teaching-learning methods were misunderstood (as it happened at DCRUST Murthal) and when it was put alongside arts courses, its technical based teaching-learning methods were felt to be outside the purview of arts (as it happened at MSU Baroda, where, after years of being attached to the arts department, the architecture program was shifted to the engineering department).

4.3 Education Policy Haryana 2000 (EPH 2000)

The EPH 2000 was based on the Government of India's National Policy on Education, 1986 (modified 1992). The overall objective was to make education relevant to the emerging environment by way of encouraging socially & economically productive skills. The vision for higher education in Haryana as stated in EPH 2000 was to cultivate a knowledge-driven community. This involved equipping the higher education landscape to address both local and global challenges. Additionally, the goal was to foster a culture of excellence and quality at both individual and institutional level across all aspects of higher education. Furthermore, there was an emphasis on integrating university education with the broader sociological development of the state.

"Education plays a pivotal role in transforming societies and nations."

The EPH 2000 stated that while the substance of education holds significance, the effectiveness of the delivery system and teaching technologies was equally crucial. Notably, substantial technological progress had occurred, particularly in the realm of information technology. India's open economic policies since 1991 had made it receptive to global advancements. Addressing the issue of rapid skill obsolescence necessitated additional efforts through 'continuing education' programs. However, higher education grappled with the challenge of aligning itself with job requirements and adapting to the evolving environment.

The EPH 2000 talked about making higher education relevant & removing disparities. The approach entails the pedagogy related inputs to be adapted in a comprehensive way based on locally defined needs and field realities; to involve the practising teachers in the process of pedagogical change, revival and renewal. To arrive at the solutions locally, Haryana had introduced courses in emerging areas of education like, vocational, technical, Information Technology etc. to facilitate the link between higher education and the workplace. This kind of enforcement would have definitely helped in bridging the gap between education & practice. But most of it remained only in papers, with things happening for the namesake, rather than actually bringing a change in the system. The massive demand for complementary training of engineering graduates in India indicates a mismatch between academic education and industry requirements. (Büth et al., 2017)

Along with changes in the curriculum, teacher's education was also emphasised. Pre-induction and in-service training for teachers was also stressed upon. Pre-induction trainings had been designed by the UGC to be imparted to the newly appointed lecturers before they actually took up the teaching assignment in the form of

a 30-day intensive 'faculty induction program'. But sadly, as it has been seen in innumerable cases, this practice was not much encouraged, individually or institutionally, especially in architectural education.

The policy states that, "Availability of teachers is not so much of a problem; the need is to ensure their proper and rationalised deployment." Whereas, in actual, availability of competent teachers has forever been a big problem in the academics.

4.4 AICTE Policy on Examination Reforms 2018

AICTE, the All-India Council for Technical Education, also plays a role in architectural education in India. As most of the architecture institutes are located in Engineering campuses across the country, the institutes have to respond to the AICTE rules along with the COA guidelines. AICTE has taken a multi-pronged approach to recalibrate the technical education in the country, in order to create competent professionals. It had proposed in 2018, the Examination Reform Policy, which, as per AICTE, would not only improve the quality of technical education in general but also examine the effectiveness of earlier initiatives of AICTE.

The policy operates under the assumption that examinations are essential for learning. Evaluation, grading, and certification within our system rely on examinations, which significantly impact a learner's progress along their educational journey. These exams not only determine whether desired learning outcomes have been met but also gauge achievement levels against established benchmarks. It states that the examinations serve as critical checkpoints for both learners and the external world, enabling the issuance of appropriate certifications that reflect an individual's proficiency in socio-economic contexts.

The globalization of the world economy and higher education is catalysing significant transformations in the engineering education system. The widespread adoption of the Outcome-Based Education (OBE) framework, coupled with an increased emphasis on higher-order learning and professional skills, demands a fundamental shift away from traditional practices in curriculum design, education delivery, and assessment. In recent years, comprehensive reforms have been initiated globally to revolutionize engineering education, addressing not only what content to teach but also how to deliver knowledge effectively and assess student learning.

On one hand, AICTE is talking about the global scenarios and on the other hand, it believes that examinations are an appropriate means to 'gauge achievement levels against established benchmarks.' The document specifically stressed upon Examinations as the method of assessment. The two aspects of global scenarios & examination are significantly opposite to each other. Even the NEP 2020 supports the fact that mere examinations wherein rot-learning is encouraged cannot remain the only tools to gauge the knowledge gained by a student.

The AICTE 2018 policy also aimed to elevate the evaluation process along Bloom's taxonomy, assessing learners' advanced cognitive abilities such as critical thinking, creativity, and problem-solving. These attributes are essential for any technical professional. Additionally, this shift is expected to align teaching and learning methods, bridging the gap between theory and practical application, ultimately preparing students for innovation and creativity. This ideal approach must be effectively planned &employed step-wise to yield expected results rather than it becoming a utopia.

The recommendations are presented in four sections. Beginning in Section-1, the most important drivers for examination reforms in Indian engineering education system are discussed. Section-2 brings out strategies to be adopted to align assessment with the desired student learning outcomes. A two-step method is proposed for mapping the examination questions with course outcomes. Section-3 highlights the necessity of designing question papers to test higher order abilities and skills. Application of blooms taxonomy framework to create an optimal structure of examination papers to test the different cognitive skills is discussed in detail. Challenge of assessing higher order abilities and professional skills through traditional examination system is brought out in Section-4. Several educational experiences and assessment opportunities are identified to overcome the challenges but very similar to what already exists.

The policy nowhere talks about creating your own code, creating a new program, a new app, a new machine, a new tool, etc. at all but only talks about conducting examination in a certain way, rather than completely changing the format or questioning the system of examination itself. The policy supposedly provides steps for improving structure and quality of assessments. The policy states the most important drivers for reforms in examination system of Indian engineering education as:

▪ Adaptation of Outcome-Based Education Framework and
▪ Importance of Higher-order Abilities and Professional Skills

In OBE framework, the educational outcomes of a program are clearly and unambiguously specified. These determine the curriculum content and its organization, the teaching methods and strategies and the assessment process. The policy arrives at a juncture where knowledge is readily accessible, creating abundant resources and opportunities for further learning. This necessitates skills beyond mere recall and comprehension—skills of higher order. In Indian engineering education system, written examinations play a major role in assessing the learning and awarding of grades to the student but the written examinations assess a very limited range of outcomes and cognitive levels. Interestingly, the policy nowhere suggests any other method of assessment other than the 'examinations', which is a very questionable, rudimentary & stern method of assessment in current times.

Bloom's Taxonomy of Educational Objectives developed in 1956 by Benjamin Bloom was widely accepted by educators for curriculum design and assessment. In 2001, Anderson and Krathwohl modified Bloom's taxonomy to make it relevant to the present-day requirements. It attempts to divide learning into three types of domains (cognitive, affective, and behavioural) and then defines the level of performance for each domain. Conscious efforts to map the curriculum and assessment to these levels can help the programs to aim for higher-level abilities which go beyond remembering or understanding, and require application, analysis, evaluation or creation. Bloom's Taxonomy was chosen for the Assessment Design as it was deemed appropriate by the Policy makers, considering its advantages. It provides an important framework to not only design curriculum and teaching methodologies but also to design appropriate examination questions belonging to various cognitive levels.

Revised Bloom's taxonomy in the cognitive domain includes thinking, knowledge, and application of knowledge. It is a popular framework in engineering education to structure the assessment as it characterizes complexity and higher-order abilities. It identifies six levels of competencies within the cognitive domain (Fig.2) which are appropriate for the purposes of engineering educators. According to revised Bloom's taxonomy, the levels in the cognitive domain are as stated in the figure below:
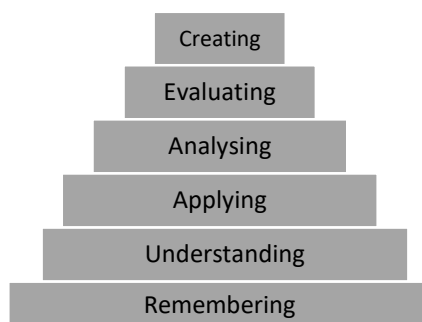

Figure 2. *Revised Bloom's Taxonomy. Source: AICTE 2018 document*

Bloom's taxonomy is hierarchical (Fig.2), meaning that learning at the higher level requires that skills at a lower level are attained (Table 1). Assessing higher-order abilities & professional skills may be done in the following ways as per the AICTE 2018 document:
1. Innovative Educational Experiences to Teach and Assess
2. Using Scoring Rubrics as Assessment Tool
3. Open-Book Examinations

Table 1. *Revised Bloom's Taxonomy Levels of Attainment. Source: AICTE 2018 document*

Level	Descriptor	Level of attainment
1	Remembering	Recalling from the memory of the previous learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using the information in another familiar situation
4	Analysing	Breaking information into the part to explore understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of viewing things

4.5 AICTE Model Curriculum for Architecture 2019

As stated, the reason behind drafting the Model Curriculum for Architecture is, "standardization and development of state of art curriculum of B. Arch., suitable for architecture and allied professions across India. During the development of curriculum, employability and employment opportunities for youth were kept in mind. Desired attributes and traits of a fresh graduate in Bachelor of Architecture were pinpointed and studied. Further Matrix of Skills required for possible categories of employability were identified and then the syllabus is revised accordingly." It is important to note here that, in India, it is the Council of Architecture (COA; a government body) which is responsible for regulating & guiding the architectural education & practice in India. AICTE has no say whatsoever on the architectural education in the country. But nevertheless, as most of the architecture colleges/ departments form a part of the engineering department/ campus, AICTE tends to take a self-proclaimed stake in how the architecture education should take place (especially in engineering campuses). Some of the terms used, like, 'standardization' is very pejorative to the current times, and also not in resonance with the NEP 2020. Education, especially architectural education has to be very regionalised. Only a region-specific take on education, as also suggested by the NEP 2020, can help students relate better to what they are learning and understand it better.

The model curriculum has been framed to meet the expectations of an academically challenging environment, develop problem solving skills, align with current standards and to enrich the students to make them self-enablers and/ or match job requirements. The important points kept in mind while developing the curriculum are employment opportunities for youth, market driven approach and rural development.

Salient features of the model curriculum, as stated, are enumerated below:
- Each course has course learning objectives & course outcomes.
- Almost every semester carries a good mix of theory and studio.
- Electives are offered to give flexibility to students and choice-based learning.
- To the extent possible, the weightage of theory and practical (in terms of contact hours) are balanced.
- As part of Architectural Design Studio Course, Compulsory study trip / tour will be conducted.
- Syllabus satisfies minimum standards of architectural education draft regulations, 2017 as prescribed by Council of Architecture, New Delhi

It is pertinent to note here, once again that, there are hardly any novel aspects that this Model curriculum introduces. It talks about all the same aspects of architectural education in the similar manner as it has already been done by the COA draft regulations of 2017 (which were published & adapted post NEP 2020). In such a scenario, one is made to question the purpose of this exercise altogether, as it brings no quality or innovative additions to what already exists. There is also some tabulated information regarding 'desired attributes and traits for a fresh graduates' divided in four categories, viz. Conceptual Skills, Interpersonal Skills, Technical Skills and Additional Traits. The table in itself is a bit confusing as to which skills & traits are put under which sub-heads. Also, 'a Matrix of Skills required for Possible Categories of Employability' is also provided, in a tabulated format and this information is also equally ambiguous, as to its purpose, need & usability. More clarity is needed to make sense of the provided information and to be able to put it to some use.

4.6 New Education Policy 2020 (NEP 2020)
The rich heritage of ancient and eternal Indian knowledge and thought has been a guiding light for this Policy. The pursuit of knowledge (Jnan), wisdom (Pragyaa), and truth (Satya) was always considered in Indian thought and philosophy as the highest human goal. The aim of education in ancient India was not just the acquisition of knowledge as preparation for life in this world, or life beyond schooling, but for the complete realization and liberation of the self.
"The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution." (NEP 2020)
NEP 2020 is a vision statement which inspires and provides directions appropriate for the new age India. With one of the youngest populations in the world, and ingrained with the capacity to become the next face of nations with inherent strength, India is on the path to decolonize its present from the chains of the past and this wonderfully scripted vision statement in the form of NEP 2020 does just that. It lays a strong foundation for a future where young India will be deeply rooted to its ancient & traditional wisdom yet growing wings and aiming for new skies. The knowledge landscape across the globe is evolving rapidly. In light of the rapidly evolving employment landscape and the global context, it has become increasingly crucial for children not only to acquire knowledge but, more importantly, to develop the ability to learn. Education should shift away from mere content delivery and focus more on cultivating critical thinking, problem-solving skills, creativity, adaptability, and multidisciplinary approaches. Pedagogy needs to evolve, emphasizing experiential learning, holistic perspectives, inquiry-based methods, learner-centered approaches, and enjoyable educational experiences.
The policy's vision includes the following key changes to the current system: revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences. Optimal Learning Environments and Support for Students is highly emphasised in the NEP 2020. It states, effective learning requires a comprehensive approach that involves appropriate curriculum, engaging pedagogy, continuous formative assessment, and adequate student support. The curriculum must be interesting and relevant, and updated regularly to align with the latest knowledge requirements and to meet specified learning outcomes. High-quality pedagogy is then necessary to successfully impart the curricular material to students; pedagogical practices determine the learning experiences that are provided to students, thus directly influencing learning outcomes. The assessment methods must be scientific, designed to continuously improve learning and test the application of knowledge.
As suggested by the NEP 2020, enhanced faculty and institutional autonomy will drive this shift. Pedagogy should increasingly prioritize communication, discussion, debate, research, and cross-disciplinary thinking. Faculty members should have the freedom to design their own curricula and teaching methods within the approved framework, including selecting textbooks, designing assignments, and conducting assessments. Teachers (or rather facilitators) are bound to be central to this change, and hence a lot of sensitization and training is required, to change the way how teaching-learning has happened for the past so many years and look at this change with a fresh pair of eyes incorporating pedagogies deeply rooted in our cultural traditions yet appropriate to the current times & practices.
In order to re-energize the regulatory system of higher education one umbrella institution, the Higher Education Commission of India (HECI) will be formed under which 4 major verticals of regulatory, accreditation, grants & education will be placed. This will be a very positive step in the forward direction wherein collaboration & efficiency is bound to bring in seamless educational environment in the country.

For architecture, COA will continue to act as Professional Standard Setting Bodies (PSSBs). It will eventually become one of the members of the General Education Council and will continue to draw the curricula, lay down academic standards and coordinate between teaching, research and extension of the domain/discipline of architecture. It would also help in specifying the curriculum framework, within which higher education institutes (HEIs) may prepare their own curricula.

For professional education, the NEP 2020 specifically says that, Effective professional preparation should encompass education in ethical values, an understanding of the significance of public service, discipline-specific knowledge, and practical skills. It should also foster critical thinking, interdisciplinary collaboration, informed discussions, research, and innovative approaches. "To achieve these goals, professional education should not occur in isolation but rather be integrated within a broader educational context." Catalysing Quality Academic Research in all fields through a new National Research Foundation is also an important point of focus in the NEP 2020. Interdisciplinary research and multidisciplinary education will pave the way for collaboration, inventiveness and critical thinking, which is the need of the current times. This will also help to create new avenues for new fields of work & research areas.

As technology increasingly shapes human endeavours, technical education is evolving to be integrated within multidisciplinary educational institutions and programs. This shift emphasizes deeper engagement with other disciplines.". (Naveen, 2021) Some of the important points which are of relevance to the higher education in general and the Architecture education in particular are stated below:

- Strong emphasis on multidisciplinary research and teaching
- To make education more well-rounded, useful, and fulfilling to the learner i.e., more holistic
- The teacher must be at the centre of the fundamental reforms in the education system
- Emphasis on conceptual understanding, creativity and critical thinking
- Imaginative and flexible curricular structures
- Novel and engaging course options
- Global Citizenship Education (GCED)

There will not only be a greater demand for well qualified manpower in various sectors, it will also require closer collaborations between industry and higher education institutions to drive innovation and research in these fields. Furthermore, influence of technology on human endeavours is expected to erode the silos between technical education and other disciplines too. Technical education will, thus, also aim to be offered within multidisciplinary education institutions and programmes and have a renewed focus on opportunities to engage deeply with other disciplines.

There is a deep focus on the traditional knowledge and wisdom. The NEP 2020 states, India boasts a rich cultural heritage that has evolved over thousands of years, encompassing diverse forms of arts, literature, customs, traditions, linguistic expressions, artifacts, and historic sites. The promotion of Indian arts and culture holds significance not only for the nation but also for individual growth. Cultivating cultural awareness and expression is crucial for children, providing them with a sense of identity, belonging, and an appreciation for other cultures. By fostering a deep understanding of their own cultural history, arts, languages, and traditions, children can develop positive cultural identities and self-esteem. Cultural awareness and expression contribute not only to individual well-being but also to societal enrichment. Therefore, Indian arts in all their forms should be integrated into education at all levels, starting from early childhood care and education. (Shikshak Parv, 2021)

NEP 2020 acknowledges the facts that there exist gaps in the current education system and states that, "the gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education while building upon India's traditions and value systems. The pursuit of knowledge (Jnan), wisdom (Pragyaa), and truth (Satya) was always considered in Indian thought and philosophy as the highest human goal. These rich legacies to world heritage must not only be nurtured and preserved for posterity but also researched, enhanced, and put to new uses through our education system."

India urgently needs to bring back the great Indian tradition to create well-rounded and innovative individuals as it happened in the ancient universities of Takshashila, Nalanda, Vallabhi, and Vikramshila and which is already transforming other countries educationally and economically.

NEP 2020 acknowledges the importance of firsthand exposure to India's rich diversity for learners. This entails incorporating straightforward activities, such as student tours to various regions of the country. These tours serve a dual purpose: promoting tourism and fostering an understanding and appreciation of India's diverse culture, traditions, and knowledge across different regions. Towards this direction under 'Ek Bharat Shrestha Bharat', 100 tourist destinations in the country will be identified where educational institutions will send students to study these destinations and their history, scientific contributions, traditions, indigenous literature and knowledge, etc., as a part of augmenting their knowledge about these areas.

Some of the major problems as identified in the NEP 2020 currently faced by the higher education system in India include:

- a severely fragmented higher educational ecosystem
- less emphasis on the development of cognitive skills and learning outcomes
- a rigid separation of disciplines, with early specialisation and streaming of students into narrow areas of study

The implementation of the policy would be guided by the following principles:
- Spirit and Intent: The critical focus will be on implementing the policy in alignment with its spirit and intent.
- Phased Approach: Policy initiatives will be rolled out in a phased manner, recognizing that each point involves multiple steps, with successful completion of each preceding step being essential.
- Prioritization: Prioritizing actions ensures optimal sequencing, with urgent and critical steps taking precedence to establish a strong foundation.
- Comprehensive Execution: Given the interconnected and holistic nature of this policy, comprehensive implementation—not piecemeal efforts—will lead to achieving desired objectives.
- Collaboration: Education being a concurrent subject, collaborative planning, monitoring, and execution between the Central and State authorities are crucial.
- Resource Allocation: Timely allocation of human, infrastructural, and financial resources at both Central and State levels is vital for effective policy execution.
- Linkage Analysis: Regular analysis and review of parallel implementation steps will ensure seamless integration of all initiatives.

India's Knowledge System encompasses a remarkably diverse range, extending beyond our historical legacy in fields such as science and medicine. It also underscores the significance of values, ethics, and inclusive governance. For instance, the concept of 'Dharma' serves as the bedrock for governance and polity.
An essential aspect highlighted is the role of Indian languages in comprehending our ancient knowledge system. These languages are rich and sophisticated, often lacking direct equivalents in English. Therefore, there should be a deliberate emphasis on preserving and promoting them.
To integrate Indian Knowledge Systems (IKS) into contemporary education, it is crucial to infuse IKS across various educational streams. Starting from the foundational stages of school education, the process of rootedness begins at home and extends to schools. Immersive experiences that engage all senses of the child foster a deeper connection to their cultural heritage. By nurturing enthusiastic scholars deeply engaged in Indian Knowledge, HEIs can drive innovative research and problem-solving.

4.7 COA Minimum Standards of Architectural Education 2020
This notification came into force in November, 2020. Similar to the 1983 notification, it states the duration of the Architecture Course to be of minimum duration of 5 academic years or 10 semesters. But now, the working weeks in a semester can follow a range between 15 to 18 working weeks (90 work days) each, inclusive of six months (16 working weeks) of practical training during 8th or 9th Semester. Some of the other important points stated are as below:
- The Curriculum structure of the Architecture course shall follow the guidelines as outlined under the Choice Based Credit System. However, the modes of periodic assessment, end semester and viva voice examinations, weightages and grading system are left to the discretion of the University or Institution.
- A candidate shall not be permitted to enrol for the Architectural Design course in a semester unless he has completed the Architectural Design course of the previous semester.
- A candidate shall not be permitted to enrol for the tenth semester Architectural Design Thesis or dissertation or project course unless he has successfully completed Practical Training or Internship.
- A candidate shall be awarded the degree in Architecture course by the University or Institution for having earned the minimum credits as specified in the curriculum.
- The Architecture Course shall be completed in a maximum period of 8 years. However, in special circumstances a candidate may be granted an extra 1 year by the University or Institution to complete the course. This shall be given only once to the candidate and treated as zero year.
- In case a candidate is not able to complete the course in the prescribed duration, the University or Institution may provide an exit option for the candidate if he has completed and earned all credits for the first three years of study.

The document talks about the duration of the architecture course, admission requirements, intake and migration, courses and periods of studies, professional examination, standards of proficiency, qualification of examiners, standards of staff, equipment, accommodation, training and other facilities for architecture education.
Under the Choice based credit system (which is a learner centric system) the courses of study in the Architecture Degree course are divided under the 3 sub-heads of,
- Professional Core (PC) Course (weightage: 50%),
- Building Sciences & Applied Engineering (BS and AE) Course (weightage: 20%), and
- Elective Course (weightage: 15%)

Elective course is further divided into Professional Elective and Open Elective. There is another set of course namely, Professional Ability Enhancement Courses which is further divided into two. History of Architecture and Culture is kept under the list of Professional Core Courses. The document also suggests some regulations in curriculum of the University or Institution. It says that there should be flexibility in the teaching or learning

system, provide for semester exchange programs in India & abroad and also to permit students to enrol for any online certificate courses.

Some teaching and learning methods are suggested by the COA with the flexibility that every institution can innovate and engage in a pedagogy based on the strength of the institutions:

a) The contents of the courses shall be taught in an application- oriented manner on a scientific and design basis through lectures, seminars, labs or workshops, studio exercises and design projects, internships and study tours.

b) Lectures to teach basic connections and the systemisation of theoretical knowledge and the methodology of scientific work. The results shall be evaluated through periodic assessment of sessional work or an end semester examination or both.

c) In seminars the contents shall be taught in dialogue and discussion phases between the teacher and the student.

d) In labs or workshops the contents of the course shall be delivered through hands on work and experiments.

e) In studio exercises the teachers shall take the lead to provide tasks and offer guidance for solutions finding. The students shall work either individually or in groups. The results shall be defended through drawings; models and reports.

f) In design studios or construction studios or projects the students contribute to the processing, analysis and the solving of problems of direct professional practice, attended by faculty(s) entitled to conduct the studio and examine. The results shall be defended through drawings; models and reports and evaluated through periodic assessment and finally by a jury or panel.

g) In Internship the students engage in work in an architectural practice/ government architecture departments and train specifically under architects registered with the COA. The results shall be periodically assessed by the architect under whom they are assigned and defend their portfolio in front of a jury or panel at the end of the internship period.

h) Study tours shall be part of the course and conducted every year. They help to consolidate course contents by acquainting students not only with professional practice but also the culture and context of a region.

i) Course work for every Semester except the Internship or practical training semester and Architectural Design Thesis Semester shall preferably have 3 or 4 lecture based courses; 2 labs or seminars or studio exercises courses and 1 Design course.

j) For calculating credits the following guidelines shall be adopted, namely:-

      (i) 1 lecture period or hour shall have 1 credit;

      (ii) 1 lab/workshop or studio exercises or seminar periods or hours shall have 1 credit and

      (iii) 1 design studio or construction studio or project or thesis period or hour shall have 1 credit. For Practical training total number of credits shall be specified for one semester only.

A suggested structure for one semester of the B. Arch course is worked out in the Table 2

Table 2. *Suggested Structure B.Arch. Course, Source: COA Minimum Standards of Architectural Education 2020*

Type of Course	Credits per course	Periods or hours per course		No. of courses	Total Credits
		Lecture	Lab/ Workshop/ Studio/ Seminar		
Lecture	3	3	-	3/4	9/12
Lab/ Workshop/ Studio/ Seminar	3	1	4	2	6
Design Project	Can vary from 9 in the lower semesters to 15 in the higher semesters	-	Varies from 6 to 10	1	Varies from 9 to 15

As also suggested,

a) All courses of study put together would engage the students for a minimum of 26 periods or hours of study a week and a maximum of 30 periods or hours a week.

b) Every semester shall offer a minimum of 26 credits and a maximum of 30 credits.

c) Credits for the Architectural Design Project or Thesis can vary from 15 to 18.

d) The total number of credits for the B. Arch Degree Course could vary from a minimum of 260 credits to a maximum of 300 credits.

The COA has suggested an optimum framework, with ample space for the courses to align with the institution's respective vision. But there needs to be more stress laid on humanities/social context-based and value-based education, which is largely missing in the current architectural practice in the country.

4.8 COA Perspective Plan for Growth of Architectural Education 2020

Architectural education since its initiation in our country has been multi-disciplinary, amalgamating quite a few parallel and lateral fields into its fold, making it more versatile and holistic. The New Education Policy 2020 which also talks of a similar structure will further liberate architecture education and if implemented effectively will improve its quality substantially. (Habib Khan, 2023)

It may be noted that, the Perspective Plan document of COA, does not talk about, History, Theory & research even once, in its entire document, published post NEP in 2020. Also, only CEPT university offers a course on History & Research on the Masters Level.

The departments/subjects, the Perspective Plan document suggest to integrate with the Department of Architecture, are already existing in the State University of Performing & Visual Arts in Haryana, and in 2017, a great initiative to integrate all these connected departments was initiated; but sadly, inter-departmental politics & self-made egos of some people forced the program to close, even after a successful run of 2-semesters with a wonderful batch of more than 200 students.

"Permitting the introduction of B.Sc. programmes in Architecture, and similar degree programs in Interior Design, Fine Arts, Animation, Product Design, Urban Planning etc. under the same umbrella may result in a good synergy while at the same time giving an economy of scale to the operation of the college."

COA proposes various initiatives to improve the role of the architects in the society and also suggests ways in which such awareness programs can be planned with the various stakeholders in the society such as laymen, government officials from various departments, school children and senior executives in private organisations. Such workshops could help to improve the awareness of architecture as a professional in society and the ways in which buildings and their performance can be enhanced with the involvement of architects at the planning and design stage. The document also suggests that COA and Indian Institute of Architects can take the lead and involve colleges in this exercise.

5. Conclusions

It is visible and evident through the various education policies critically examined for the study that, each of them underscores a 'paradigm shift' in the education system and calls for reforms with relation to integration, critical thinking, enquiry-driven approach and becoming more experiential. The education policies also stress upon innovative and new teaching-learning methods to be developed for the new-age learning. In the ever-evolving landscape of higher education, transformative changes ought to be underway. These shifts need to be primarily driven by a renewed focus on empowering faculty and fostering dynamic pedagogical practices.

If we look at the Bloom's Taxonomy revised model, we can observe that in theory, Architectural Education is very much in line with the Revised Bloom's Taxonomy. Architecture students are made to 'remember' the Historic & Theoretical information, 'understand' it and 'apply' it in their own Design Problems which are conducted as a studio course. The students also tend to 'analyse' the precedents related to the project undertaken, 'evaluate' the pros and cons of the various precedents they visit in person as well as through secondary data sources. And the final outcome is the project that they 'create' on the basis of this entire understanding that they have created through various physical & theoretical exercises along with numerous interactions & discussions with their facilitators & peers. But this process has become monotonous and repetitive with time, without being enriching and experiential. There is a need to bring the 'love of learning' and 'self-motivation' back in the system to encourage critical thought and life-long learning.

To facilitate this change, it is significant to bring increased awareness among faculty and administration and bring in enhanced faculty autonomy in the curricular design. Flexibility in the curriculum allows for more relevant and engaging learning experiences which can be modulated to suit the student demographics & local context.

Pedagogical shift is necessary from a teacher-centric model to one that prioritizes student needs, interests, and takes into consideration student's learning styles. Education should foster dialogue, facilitate discussions, and create an interactive learning environment wherein students are challenged to analyse, question, and engage in discourse. Encouraging debate and critical thinking skills is central to modern pedagogy. It is important to break down the silos that exist between the disciplines and interdisciplinary & cross-disciplinary thinking are to be promoted to help students towards fostering creativity and problem-solving. Research & innovation are inherent to critical thought and need to be promoted in the classroom and outside. Beyond theory, students should engage in experiential learning through internships, projects, and real-world applications.

There is a sheer need to move beyond the testing of learning through examination system and adapt new assessment methods & techniques to understand the learnings. Projects, presentations, portfolios, and peer evaluations allow for a holistic understanding of student learning. Assessments can mirror real-world scenarios wherein students apply knowledge and skills to practical situations, preparing them for real life. Faculty should engage in ongoing feedback with students, guiding their progress and identifying areas for improvement. No one single format should be used, different strategies for assessments should be used as per the need of the class. Appropriate rubrics should be formulated to create more meaningful and informed assessments which help improve the student's work rather than simply categorising them into marks and percentages.

The evolving landscape of higher education should prioritize faculty agency, dynamic pedagogy, and personalized learning experiences. By empowering faculty and encouraging innovation, institutions can pave the way for a more responsive and effective education system. Policy frameworks in education should ensure effective communication channels to provide structure, consistency, and clarity, enabling various institutes to

adhere to its goals and values alongside providing flexibility to accommodate each institute's unique characteristics.

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Author Contributions

Both the authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Shalini Sheoran. The first draft of the manuscript was drafted by Shalini Sheoran and Dr. Manoj Panwar critically revised the previous version of the manuscript. Both the authors read and approved the final manuscript.

References

1. *A Concept Note on Stimulating Indian Knowledge System, Arts and Culture SHIKSHAK PARV, 2021*. (n.d.).
2. Aditi, A., Singh, D., Singh, A. J., Arch Scholar, M., & Gujral, I. K. (2022). Issue 6 www.jetir.org (ISSN-2349-5162). In *JETIR2206753 Journal of Emerging Technologies and Innovative Research* (Vol. 9). www.jetir.org
3. Aithal, P. S., & Aithal, S. (2020). Analysis of the Indian National Education Policy 2020 towards Achieving its Objectives. *International Journal of Management, Technology, and Social Sciences*. https://doi.org/10.47992/ijmts.2581.6012.0102
4. Anderson, L.W., Krathwohl, D.R., & Bloom, B.S. (2000). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Addison Wesley Longman, New York
5. Architecture Education Way ahead, in pursuit of Education Reforms: Interim Report 2023
6. Büth, L., Bhakar, V., Sihag, N., Posselt, G., Böhme, S., Sangwan, K. S., & Herrmann, C. (2017). Bridging the Qualification Gap between Academia and Industry in India. *Procedia Manufacturing*, *9*. https://doi.org/10.1016/j.promfg.2017.04.009
7. Council of Architecture (Minimum Standards of Architectural Education) Regulations, 1983
8. Council of Architecture (Minimum Standards of Architectural Education) Regulations, 2020
9. Education Policy of Haryana, 2000
10. Examination Reform Policy, November 2018, AICTE, New Delhi
11. Lakhno, M. (2023). What Is a Policy Framework? An Attempt at Conceptualization. *Socialni Studia/Social Studies*, *20*(1). https://doi.org/10.5817/SOC2023-35675
12. Model Curriculum for Bachelor of Architecture (B. Arch.), 2019, AICTE, New Delhi
13. Naveen, H. M. (2021). *NEP, 2020: PERSPECTIVES AND FUTURE OF TECHNICAL EDUCATION IN INDIA*. www.ijcrt.org
14. New Education Policy, 2020
15. *The Future of Architectural Education in India - The Crises and Challange - Prof. Christopher Benninger*. (n.d.).
16. Tzonis, A. (2014). Architectural education at the crossroads. In *Frontiers of Architectural Research* (Vol. 3, Issue 1). https://doi.org/10.1016/j.foar.2014.01.001
17. Varkey, T., Tom, B., & Augustine, B. (n.d.). *Preparing Architectural Education for Atmanirbhar Bharat*. https://doi.org/10.36375/prepare_u.iei.a252