Inducing 'Curiosity' in Architectural Design Process

(Architectural Pedagogy - Practices for Hybrid Medium)

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Abstract

Aim

To articulate a framework of inducing curiosity as an approach in the Academic & Pedagogic aspects of the Architectural Design curriculum, in seeking a resilient Design Pedagogy and Curriculum for the foreseeable future.

Introduction

The discipline of Architecture is currently in its most challenging times. Both the Academic as well as the Professional space is addressing a very emphatic problem. The problem of similarity, of repetitiveness, across the developed parts of the world. Both these, The Academic & The Professional space, in the age of information & over reliance on the human sense of Visual aesthetic & convenience leading to an indulgent 'Image' & object, as Ar. Juhani Palasma puts it in his work, 'Eye of the Skin'; are currently grappling with ways to break this mould towards a resilient system of processing design content.

The scope of this paper is limited to the Academic Space alone. Thus the ideas discussed are with reference to the academic space structuring, more so, in the context of the Curriculum identified by the COA with respect to the Academic Model and the Mumbai University syllabus with respect to the Pedagogic model.

One of the problems that most could relate to as a teacher and a student is the question of individuality as against what is in vogue. In that it's not only the drawings and presentation content seen across recent years, but also the repetitiveness of programs, of the program briefs themselves, that have been found more as a representational Image-Object, rather than a diagram that could evolve in future.

To address this problem cited above this paper suggests an approach that points at the most fundamental premise of the design discipline. That of imagination and inquisitiveness. The most abstracted aspect in a deductive manner to understand this approach would be to discuss an approach of inducing CURIOSITY in the Teaching and the learning environment, viz the Academic and the Pedagogic approach.

Methodology

The CURIOSITY approach looks at the spirit of the design process to understand what makes it work, how it appears as a process in itself, and what is the design seed. In what ways have most of us understood this structure and in what ways should it be seen infact.

Further, the approach propounds the engagement of the self with four stages of curiosity that discuss the journey of gaining of knowledge to accumulation of wisdom as a significant essential outcome for an integrated outlook towards both the Academic & Pedagogic models.

For an Academic model the approach works with these questions. Dealing with learning, teaching and knowledge creation leading to having a systemic teaching approach from a person centric teaching approach.

For the Pedagogic Model the approach works with the idea of experiential learning as suggested by Kolb, 1984, Experiential Learning-Experience as a source of learning and development; the model further explores the curiosity quotient through scaling of projects at various semester levels. The method of design evaluation is addressed through the question of representation & communication making sufficient ground for understanding the significant value of the design.

Findings & Implications

The Understanding of Curiosity as a plausible approach, when it questions the structuring of the design process, it comes forth with a very specific Archimedean spiral kind of a structure as against a typical structure that one could imagine. This entails that the design process is a cyclic loop and not a linear progression having a start and an end.

The Academic Model subjected to the Curiosity approach brings forth an interesting set of propositions for relooking at the learners environment. A time table focused on activities as against the conventional focused onto subjects, Clustering & Abstraction of subjects leading to identification of core fundamentals taught separately as theory and the common applicative aspects considered for integration through a project, work with varied scales of inquiry at various years and thus developing the design sensibilities; learning in the ways of experiencing something, learn abstracting a significant value, learn thru making, learn to evaluate the outcomes; and a few more.

The Pedagogic Model subjected to the Curiosity approach has these aspects coming forth, The idea of how architectural design process can be concluded across four stages Strategic Architecture, Creative Architecture, Technical Architecture, performative Architecture; A pedagogic model of design process from Origin to Evaluation; Kolbs model of experiential learning, specific set of deliverables well defined for the stages of design process rather than a typical portfolio alone, the STAR method of evaluation, looking at Representation as a thought and Communication as language to the specific kind of recipient.

These findings are having sufficient relevant examples from the various academic practices by the author across the last two decades. These studies are an ongoing process getting its feed from the various feedback from students and faculties in the discipline of architecture across two decades of practice and teaching. These are part of the argument/Thesis of this paper. These arguments are entirely an opinion of the author and have no other suggestion to be prescriptive in any manner.

Keywords—Curiosity, Academic Model. Pedagogic Model, Architectural Design Process

I. BACKGROUND

The discipline of Architecture for last few years has been in its most challenging times. Both the Academic as well as the Professional space is addressing a problem of similarity, of repetitiveness, across the developed parts of the world. Both these, The Academic & The Professional space, in the age of information & over reliance on the human sense of Visual aesthetic & convenience leading to an indulgent 'Image' & object, as Ar. Juhani Palasma puts across in the 'Eye of the Skin'[i]; are currently grappling with ways to break this mould towards a resilient system of processing design content.

In the last two years since the breakout of the Covid-19 pandemic and lockdown ensued thereafter, taking to the online medium of teaching and learning for our discipline, hasn't been any better than any other. Infact several areas of thoroughness of the core learnings in our field have not shaped up to expectations. Largely due to the online medium being a new concept for education for an architectural stream, the general opinion of most of the members of the academic fraternity is that this newness has caused considerable issues of adapting to the medium for both the teacher and the learner likewise.

The University Grants Commission, New Delhi, on May 2021, in its concept note[ii] for blended learning regarding higher education streams, has mandated that there should be a ratio of 60% -40% for offline-online education. Thus online education should be a part of pedagogy for 40% of all that needs to be addressed in a given term. Post complete lockdown, since Jan 2021, the Institutions have started addressing students in specific restricted numbers on campus, as per the covid social distancing protocols. This entails to a 'HYBRID' learning and teaching mode, which has opened up new challenges in coming to terms with the content and the methodology for creating the appropriate learning environment for students.

In context of the Mumbai University (MU) Syllabus for B.Arch, here onwards termed as MU, the aspect of an integrated approach to learning is very essential to be imparted to the students. The MU Syllabus encourages integration of courses as relevant to the semester studies, and it also accords 25% of the curriculum space to be determined and created by individual colleges themselves in form of electives, college projects. This entails seeking out relevant integration of learning and applicative content of various subjects as an interpretation by the individual college. This disposition itself has been a complex exercise of bringing subject content together and or handled separately vis-a-vis core content for various semesters and now is a greater challenge to mitigate in the hybrid environment.

In summary the background of Architectural Education in pre covid times and post covid times addresses three major areas of concerns:

1. Integration of relevant subjects
2. Pedagogic model for 100% Online delivery during complete Lockdown period
3. Pedagogic model for partly online partly offline, 40-60 model

In context of this paper the main argument lays in exploring a process for a resilient academic and pedagogic model in the future times catering to this hybrid as well as fully offline scenario akin to pre-covid times.Ease of Use

II. THE CIRCUMSTANCES - THE ONLINE-OFFLINE BLEND

Since the period of complete lockdown from March 2020 to Jan 2021 institutes affiliated to the MU had undertaken all the subjects and related activities for the B.Arch course, to be conducted online. This session has offered several challenges for delivering and receiving education by all concerned. Conducting lectures, workshops, surveys, practicals, juries and exams has not been feasible without additional new knowledge and digital systems & software.

Google Suite has been the primary core support for creating virtual classrooms, conducting online lectures, creating assignments, MCQ or multi choice questions, creating assessment and evaluation grades, using the online google programs, apps and extensions to create interactive sessions for students to participate and co-create knowledge. The Jam Board, Concept Board, Mind Mapping, Mento meter, are a few online free openware programs that allow participatory learning and content creation.

Due to the integrated feature of google classroom it has virtual teaching aids that allow most of the learning activities for the students in the discipline of Architecture. One wouldn't have imagined before that a day would come when Architectural Graphics could be taught online using computer aided drawing softwares such as CAD, REVIT, Sketch up etc.

Students as learners took to the online medium in a positive manner at the outset. Subsequently both the teacher and students were subjected to screen fatigue in an acute way. For the students this meant not attending the entire session thus keeping cameras off. This also lead to missing out on various important aspects of the contents taught and then getting into a space of disarray with respect to the outcomes thereof. Their connect with the overall scheme of things has decreased due to various psychological reasons during the lockdown, and eventually this continued in the hybrid period as well, affecting the overall intensity and involvement with academic content.

The faculty side also has come across several issues to deal with during the new medium of communicating content. One way delivery or monologue as was during in-person offline sessions especially for lectures etc; suddenly was not a good idea. Students were found not inclined to engage with long time screen exposure during such monologues. This amounted to changes in the ways of teaching itself. This has been an experimental space and it is still work in progress. Considerable time has been invested to find and operate with the right mix of content for the online sessions. This paper brings forth a few ideas of learning to address this fragmentation for any topic since the consolidated learning would allow variety and broadening of knowledge unlike the single stand alone lecture delivery of the same in one long session.

Post Jan 2021, as all institutes were mandated to begin partly online and partly offline, the pedagogic model had to be tweaked to suit the arrangement of batches attending sessions

turn by turn. Institutes in Mumbai have largely focused on studio sessions hosted at college premises to entertain doubt solving and training for students. The lecture delivery is largely comprising 40% of overall content for various subjects, and is hosted on online portals. To aid holistic learning there has been an emphasis on free hand proportionate sketching work, manually drafted work as well as computer aided work. Material testing, Surveys, practicals etc have being performed by the faculty members themselves and the videos were made available online for the students as learning material and reference material.

Regarding the students expressing their learnings through various mediums and types of works it has been largely seen during juries and cross college juries that students have not come forth with the kind of intensity of learning as should be reflected in these conclusive works, as has been the conventional idea during post covid times. One of the most challenging problems of these times have been the problem of similarity, of repetitiveness in the various aspects of works across the content experienced during juries and as discussed broadly by the participating jury members.

Various shortcomings in the overall end semester work across the region bought up this opportunity to look at the academic and pedagogic model in detail to seek areas of improvement and sustenance of the learning ecosystem. This paper includes the experiences of the author alone and is thus limited to the experiments thought of, tried over in this limitation of executing the ideas as relevant. Refer Table-1, this has a few consolidated gatherings regarding the concerns of the architectural education culture at large.

Fig. 1. Concerns from the B.Arch Education culture. (Author)

Program	Faculty Reflex	Student Reflex	Evaluation	Knowledge & Learning	Studio Methodology
Stand-alone not integrative	Good Research & Detailed	Didactic	Faculty-focused	Intuitive & Declarative	Pragmatic approach
	Instructive & only covering schedule	Passive approach, sameness in expression (H&V)	No student involvement at all	Low Inter-class interaction	Individual progress
	Focus only on certain students/group	Randomized & non methodic working	Appeasing faculty	Limited to own self & or faculty	Objectives not engaged at class level
Hands-on without clear objectives spelt out	Experimental & variation	Re-produce Faculty Intent	Faculty-focused	Reflection of faculty intent, limited self growth	Sequential & Rule based, pragmatic
Creatively Inclined	Imaginative but implicit	Artistic-Fantasy driven-Intuitive, low on method	Faculty-focused	Expression based	Open ended & limitless, low on innovation
				Broadly Conventional learning	

The paper does not promote or advocate these ideas as an all compliant successful generic model for architectural education. From the limited insights of the author and restricting to the limits of the paper, some of the take aways from having a certain understanding of the circumstances deal with a few areas of concern as following, but not limited to these alone for sure,

1. How to retain student learners' interest towards learning?
2. How to induce generation of multiple ideas, concepts?
3. Exploring the extent of a Subject briefs/program being stand alone
4. Scope for integration of subject content, application & outcomes
5. Striking balance for conventional and innovative content
6. Emphasize and aim for continuous learning as against intermittent silo learning
7. Strike balance of outcomes as with concerns of the object/product itself and also the significance for the user community at large
8. Architectural Critique, discussion, evaluation and feedback centered on learnings rather than limited to being faculty centric

III. ARTICULATING THE PROBLEM

This paper is setting up a proposition regarding the background and circumstances discussed in previous paragraphs here. This is an opportunity to rethink the most fundamental aspect of education and address the foreseeable future through the same lens. This way one can atleast explore opportunities to set the significant aspect of education in its most deserving space.

The most fundamental thing while addressing education is the space of imagination. This proposition finds substantial support in Einstein's famous quote: "Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution. It is, strictly speaking, a real factor in scientific research."[iii] (from his *On Cosmic Religion: With Other Opinions and Aphorisms*, 1931, p. 49).

In an at once creative as well as critical discipline as Architecture it is essential to find an appropriate area of tweaking to the effect that learning and thus teaching in turn, becomes very natural. For both these faculties of thought the initiation point stays the same, to identify a strong desire to learn, and generate adequate ideas, concepts to address this learning and apply the same effectively in various conditions. In other simpler terms this means that its essential to have a curious approach to learning, where the desire to learn is the driving factor, motivational factor for the learner and then go on to use imagination to create various ideas, concepts for addressing the learnings appropriately.

Thus the paper is restricting its contribution to the domain of this most fundamental aspect of architectural education, which is exploring ways to induce curiosity and seek resilience and engagement of both the student and teacher in a continuous learning environment. This approach could be manageable both in the online and offline formats with little detailing for both situations. This approach also is hopeful that the structuring shall help both the faculty and student learners to find their own space of genuine interest leading to continued involvement and enrichment of the experience thereof.

IV. THE HYPOTHESIS

This paper identifies an Aim as follows: To articulate a framework of inducing curiosity as an approach in the Academic & Pedagogic aspects of the Architectural Design curriculum, towards seeking a resilient Design Pedagogy and Curriculum addressed through a hybrid medium for the foreseeable future.

There are a series of arguments that the paper offers for giving a thought to the framework of questioning that one needs to address while exploring the relevant academic & pedagogic framework as an outcome of the process.

1. The spirit of everything is in looking at what makes it work, the structuring of the thing itself (Artist Andy Goldsworthy, Documentary: Rivers and Tides)
2. Architectural Design Process is an 'Archimedean Spiral form as against a 2d Cyclic process as is conventionally depicted in most of the available content in known media.

Fig 2. Fig 3 Fig 4.

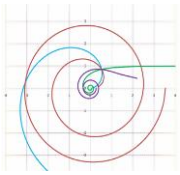
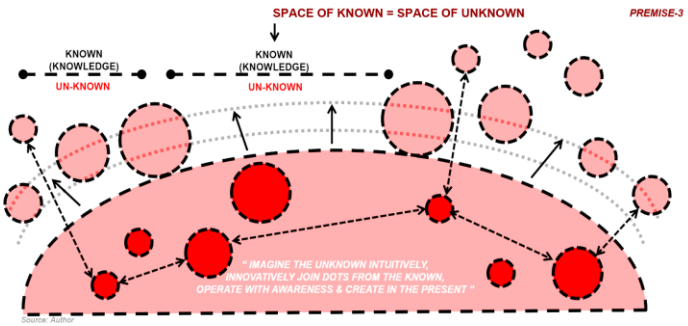


Fig. 2. Archimedean Spiral Plan View. *(Source: Internet)*
Fig. 3. Archimedean Spiral 3D View. *(Source: Internet)*
Fig. 4. Archimedean Spiral Side 3D View. *(Source: Internet)*

3. Architectural education should seek for a conducive environment to nourish the 'Design Seed'
4. The Design Seed responds to the environment and seeks out the unknown, thus expand itself, absorbing the known and the now newly known along the way.
5. The more the Design seed knows, it expands & grows, but at the same time its boundary of the unknown has also increased. It knows more about the known and also needs to be aware of the increasing domain of the unknown.
6. The above can be sustained only through an approach of CURIOSITY

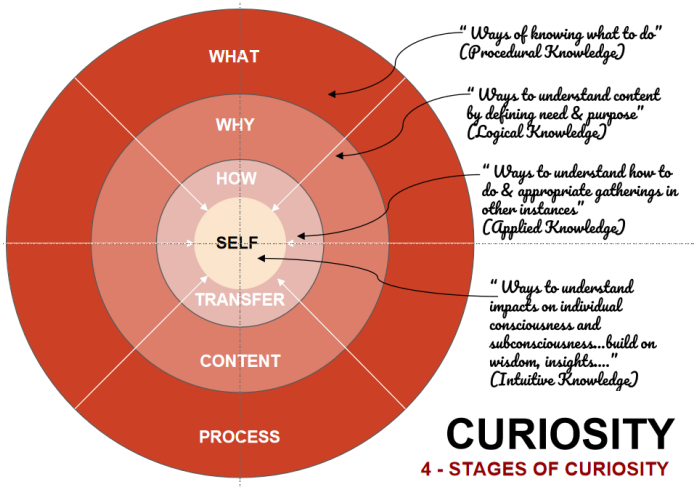
Fig. 5. Conceptual Diagram-1 of Curiosity & Knowledge relation. *(Source: Author)*



The Design Seed responds to the circumstances, develops interconnectedness and starts growing, absorbing and 'Knowing'...but it's true growth is in always curiously approaching the Unknown using imagination...The more the design knows, it should also be aware it doesn't know as much at the same time.....Curiosity helps sustain this constant growth process....Curiosity begets Growth...Learning....Fresh outlook...Parallel Possibilities.....

7. The journey of gaining knowledge to accumulation of wisdom is the order of curiosity. This operates on the four levels of gaining knowledge. The first state is the ways of knowing WHAT to do (Procedural Knowledge), the second is ways to understand by defining the WHY- a need and purpose (Logical Knowledge), the third being HOW to apply in other instances the appropriate gatherings in the preceding two aspects; the fourth being the ways to understand impacts on individual consciousness, subconsciousness and building on the insights and wisdom thus.

Fig. 6. Conceptual Diagram-2 of Curiosity & Knowledge. *(Source: Author)*



8. By understanding this idea of Curiosity, its possible to rethink upon the Academic & Pedagogic Model for Architectural education and thus seek its resilience through such an approach in times to come.
9. Keeping CURIOSITY at its core, the Academic Model is focused on how to TEACH and the Pedagogic Model is focused on how to LEARN.

These nine arguments are the backbone of the proposed structure and framework of the Academic & Pedagogic model. The methodology explains these aspects in brief. There are a few examples of this exercise for both the models and the paper concludes with a generic inquisitiveness diagram for keeping this entire process as an ongoing evolution, rather than seeking any final conclusion.

V. METHODOLOGY

Various academic semester end reviews of the students works presented and also the review of the program structures; not only during pre covid times, but also during these last two years of the covid pandemic times; have been considered to identify most vital areas of questioning to obtain a new perspective to the already known. Knowingly and unknowingly there has been a considerable contribution in developing these insights, by several faculty members and architects with whom the author has interacted across years.

These questions are restructured from the curiosity approach point of view and have lead to the suggested model articulation. This section of the paper offers the set of questions for both the Academic and the Pedagogic model one after the other. The findings and outcomes of the same shall be shared in the next section of this paper under the same sub title.

TABLE I. QUESTIONS TO DETERMINE CURIOSITY APPROACH FOR ACADEMIC AND PEDAGOGIC MODELS OF ARCHITECTURAL EDUCATION

No	Academic Model	Pedagogic Model
1	What can be done towards fostering a diverse nature of curiosity, a varied dimension of novelty working with various forms of knowledge thru the academic subjects?	In what ways can the design process be understood from the point of view of keeping in line with learning at all its respective stages?
2	Would organizing an appropriate sensorial stimuli appealing to the senses of the learner engage effectively all learning styles?	What kind of learning is essential for the Design (Architecture) Discipline that could facilitate an exhaustive experience and also result in better comprehension & retention of its contents?
3	What can be done to induce a space for gaining indepth specific learnings, thus addressing a specific aspect of curiosity?	Can we define the variety of projects across all five years for the learner? On what basis?
4	What can be done to induce a layered complexity in its singularity rather than have isolated levels of complexities addressed thru various subjects independently?	What can be done towards fostering a diverse nature of curiosity, engaging all learning styles, while working with nature of deliverables across the semester?
5	Can a part to whole approach, that of a slow reveal, based on a single sense of significance be inculcated across the works?	What kind of classification of content should we address for curiosity to operate through the working of the design scheme?
6	--	How to evaluate outcomes making sure the learner stays curious even at a penultimate stage?
7	--	What facets could be touched upon to infuse Curiosity into the final stage of Representation & Communication

VI. Findings & Implications

These have largely stemmed from the various ongoing explorations with academic processes by the author. These are thus subject to considerable limitations, being subjective from the author's perception alone. These cannot be validated for a generic broader need. These can be taken up for further exploration and then applied only as relevant to other cases if so desired.

The questions raised in the methodology section are been reproduced here for ease of understanding. The two columns, viz., Questions and Findings/Explorations need not necessarily be read as question on left and answer on right. Its not connected consciously, but just to give a concise form to the study & for ease of comprehension the table format is used.

A list of few applications or implications of these explorations are shared in this paper further in this section for coming to terms with the effectiveness of this approach. Some illustrative and diagrammatic examples are provided here for a better communication of the content as possible.

TABLE II. ACADEMIC MODEL OF QUESTIONS, FINDINGS & EXPLORATIONS

No	Academic Model Questions	Academic Model Findings/Explorations
1	What can be done towards fostering a diverse nature of curiosity, a varied dimension of novelty working with various forms of knowledge thru the academic subjects?	Creating a time table based on activities rather than the conventional idea of based on subjects. The activities could be as follows: studio, lecture/seminar, on-site studies, workshop/lab, documentation, self study/research
2	Would organizing an appropriate sensorial stimuli appealing to the senses of the learner engage effectively all learning styles?	Creation of clusters of subjects towards bringing an inherent nature of activity involved - abstraction of subjects to combined clusters. Four verticals such as Contextualize, Create, Rationalize, Communicate
3	What can be done to induce a space for gaining indepth specific learnings, thus addressing a specific aspect of curiosity?	Have scales of inquiry at various year wise stages, Human, Nature, Neighborhood, City, Architectural Discipline.
4	What can be done to induce a layered complexity in its singularity rather than have isolated levels of complexities addressed thru various subjects independently?	Sharpen the design sensibilities across the years by organizing the content around one significant architectural outcome such as and starting from 1st year Composition, 2nd Year Order, 3rd Year Form/Operations/Functions, 4th Year Systems & Practices in the final year.
5	Can a part to whole approach, that of a slow reveal, based on a single sense of significance be inculcated across the works?	The integrative subjects identify their own core fundamental theoretical learnings and finish in 25% to 30% space of semester. Theory lecture content gets delivered thru the experiential learning method, study material identified and shared with learner
6	--	Create various learnings from studies (observe, analyse, critique, infer, strategize)
7	--	Learnings from studies convert into abstraction and conceptualization of fundamental aspects of theory thru simple core theory exercises
8	--	Accumulation of skill and ability thru exercises can be tested thru combined assignments having core-overlapping principles from few subjects. Learner has to apply knowledge and learn to create value
9	--	Create atleast 50% time of the semester and offer a project program to apply all kinds of self-learnings in the various subject verticals involved across the semester - An Integrated design project. Learner has to apply knowledge to invent and innovate.

The Pedagogic findings/explorations are as follows:

Refer Table-III on next page, contd/--

TABLE III. PEDAGOGIC MODEL OF QUESTIONS, FINDINGS & EXPLORATIONS

No	Pedagogic Model Questions	Pedagogic Model Findings/Explorations
1	In what ways can the design process be understood from the point of view of keeping in line with learning at all its respective stages?	A Design studio work should work around 4 architectural articulations, 1. Strategic Architecture (Contextualize), 2. Creative Architecture(Create), 3. Technical (Rationale) Architecture, 4. Performance (Reach-Out) Architecture
2	What kind of learning is essential for the Design (Architecture) Discipline that could facilitate an exhaustive experience and also result in better comprehension & retention of its contents?	Origin, Review, Iterate, Differentiate, Evaluate, Communicate; these are 6 stages of the design process which allow a space of infusing curiosity as relevant to each for the overall significant value or sense of purpose for any design project
3	Can we define the variety of projects across all five years for the learner? On what basis?	Experiential Learning is a suitable method for learners in the discipline of design, architecture. Kolb's model of Experiential learning is a good handy reference for understanding deeply the pedagogic outlay of programs, its four Stages are 1. Experience/Observation, 2. Abstraction/Conceptualization, 3. Making, 4. Evaluation. Entire semester the students should use these in their design process as relevant start to end.
4	What can be done towards fostering a diverse nature of curiosity, engaging all learning styles, while working with nature of deliverables across the semester?	User studies & thus Projects across the five years can be defined on the basis of increasing complexity & layering of content. From Human scale in 1st semester to the scale of Discipline in the Final Thesis.
5	What kind of classification of content should we address for curiosity to operate through the working of the design scheme?	Architectural production largely deals with creation of Reports, Documentation Studies, Analysis, Illustration, 3D Physical Models, Simulation; Building Drawings, Details & Specifications, Quantification, Schematic Diagrams, Presentation. These can feature in academic deliverables appropriately, as this assures no doubling of effort for deliverable across subjects, and also this suits most learning styles.
6	How to evaluate outcomes making sure the learner stays curious even at a penultimate stage?	Curiosity needs to be understood differently at Macro to Micro scales. From across a macro level Strategic Scale to the micro scale of Detail, it is essential to maintain coherently the purposefulness towards that one significant value of design that the designer wishes to address thru the design process.
7	What facets could be touched upon to infuse Curiosity into the final stage of Representation & Communication	Classification of Design content is at various levels. Site plan level, Plot occupation, Spatial Scheme comprising of spaces, volumes, circulation & sequence, structure, plans, sections, elevations; The Setting/Environment & Atmosphere for feel purpose as expressed through the views, detailing, finishes & textures etc.
8	--	The STAR method of evaluation for confirming coherence of Significant Value as addressed thru the design process, this method is very effective in keeping the learner interested across the process of evaluation of the work outcomes. STAR method expands as follows: S=Situations addressed for design at all levels, T= Tasks done to address the situations, A=Actions performed, R= Results expected or achieved or tested.
9	--	Representation is the thought entertained to establish relation of the concept presented to the language used to bring the same to the fore. Communication is the language itself that is used to express the thought that has gone into the Design. This difference allows considerable variety to question both these and retain a curious attitude till the culmination of the process of communicating to the end user/client respectively.

A. Implications of the Academic Model (How to Teach)

A.1) Clustering of MU Subjects to create INTERDISCIPLINARY INTEGRATION (Refer Fig-7)

A.2) Inducing Futuristic Concerns into the Studio program (Refer Fig-8)

A.3) Horizontal-vertical Integration - The Academic Model (Refer Fig-9)

A.4) Derivative Teaching Model (Refer Fig-10)

Interdisciplinary Integration matrix (Fig-1) allows subjects to be located as clusters and the content can thus be identified as core content for a subject and common overlapping content. This can be optimized by undertaking the two aspects under various activities to enhance the overall idea of learning the content holistically.

The next figure (Fig-8) is a framework that expands on a few ideas of current and futurist concerns of the architectural discipline that could be undertaken through the studio and theory programs. The Academic Model matrix (Fig-9) is the actual horizontal and vertical integration possibility space as per the MU subjects. Values have been identified for each stage across the semester and year of working. The Derivative teaching model (Fig-10) is the suggestive approach for

teaching any content in four ways, the Studies, the exercises, the assignments and the integrated design project.

Fig. 7. Clustering of MU Subjects to create INTERDISCIPLINARY INTEGRATION *(Source: Author)*

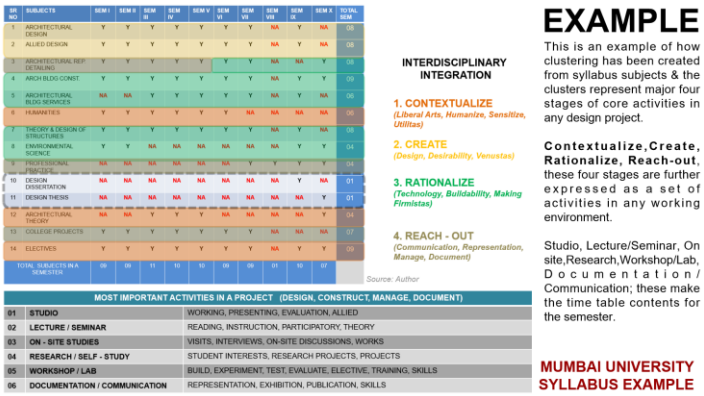


Fig. 8. Inducing Futuristic Concerns into the Studio program *(Source: Author)*

Fig. 9.

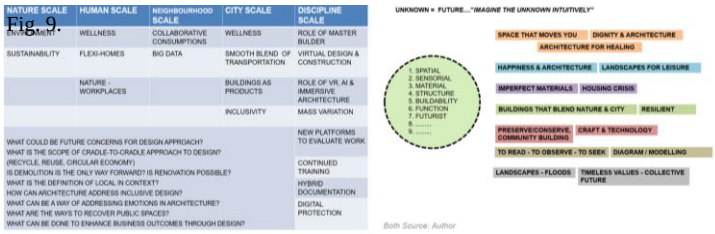


Fig 9. Horizontal-vertical Integration - The Academic Model *(Source: Author)*

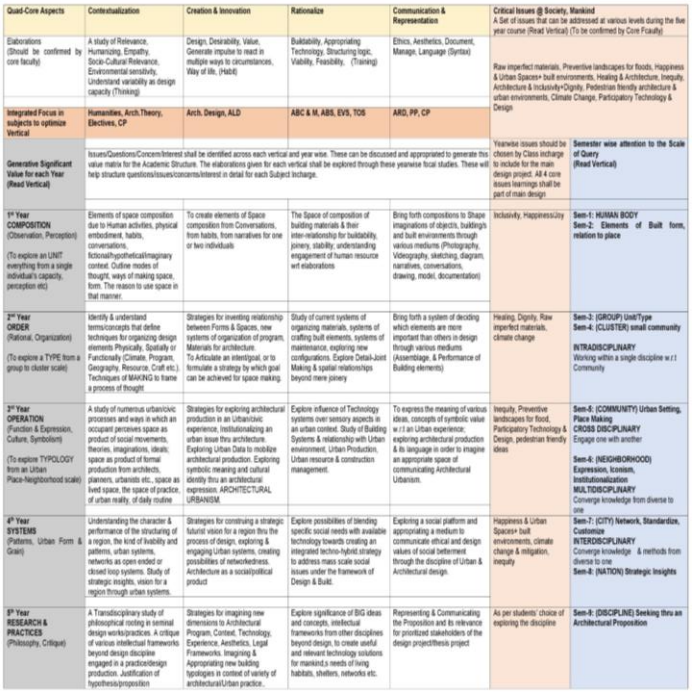
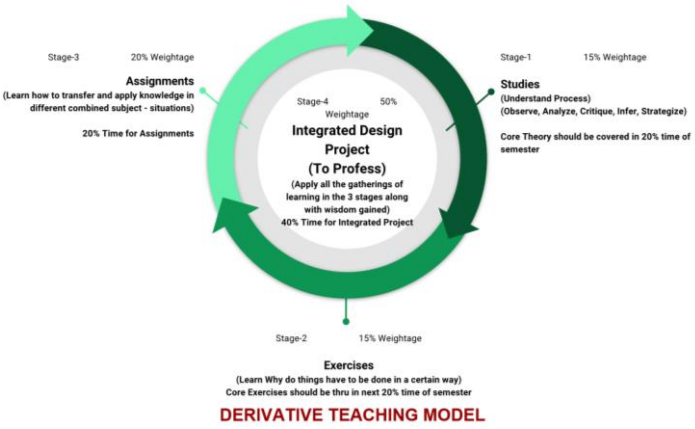


Fig 10. Derivative Teaching Model *(Source: Author)*



B. Implications of the Pedagogic Model (How to Learn)

B.1) Derivative learning Model (Refer Fig-11)
B.2) User Scales (Refer Table-4)
B.3) Classification of activities & deliverables (Refer Fig-12)
B.4) Architectural Scales & related studies (Ref Fig-11 Drawing scales row)

The derivative Learning model (Fig-11) propounds the experiential learning model[iv] derived from KOLB's original experiential learning model. This learning model attempts to integrate the academic, pedagogic, practice models with the design process and informs the drawing scales to be attempted to process the same. The User scales table (Table-4) suggests the kind of user configuration and the scale of project that could be taken up for the various semesters. The classification of actgivites and deliverables (Fig-12) is a critical matrix that aims to distribute the learnings involved in any one topic into numerous forms and mediums of undertaking the same by the learner student. This variety shall help create a holistic understanding of the content in a far better interesting manner than just the conventional drawing sheet or other such singular product to evaluate the learning outcomes.

Fig. 10. Derivative Learning Model *(Source: Author)*

EXPERIENTIAL LEARNING : OBSERVE, ABSTRACT/CONCEPTUALIZE, MAKE, EVALUATE (THESE 4 SHALL STAY COMMON AT ANY STAGE OF WORKING ACROSS THE ENTIRE SEMESTER)				
Academic Model	Contextualize	Create	Rationalize	Reach-out
Pedagogic Model	Pre-design	Schematic Design	Advanced Design	Final Design
Design Process Stages	Origin, Review	Iterate & Differentiate	Evaluate	Represent & Communicate
Practice Model	Strategic Architecture	Creative Architecture	Technical Architecture	Performance (Implementation) Architecture
Drawing scales	Location & Site plan, 1:5000, Site/Plot context 1:1000/500, Site SWOT & Strategies 1:1000/500	Site occupation & Massing 1:200, Spatial Composition 1:200, expressiveness & Workability 1:100	Design detail, Strip Sections, 1:50/25/20/10/5/2/1	Rationale of design solution scale as relevant
ENTIRE SEMESTER TIME				

TABLE IV. USER SCALES

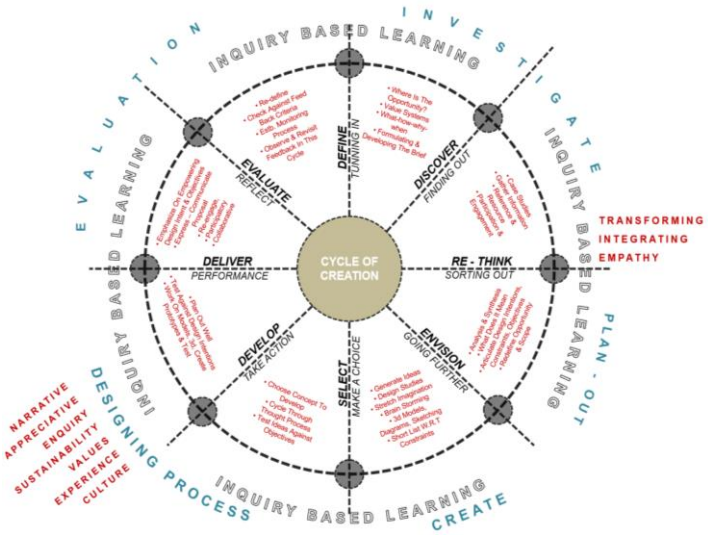
No	Semester	User	Scale of Project
1	Sem I	Individual	Element
2	Sem II	Individual	Envelope
3	Sem III	Small group	Space
4	Sem IV	Cluster	Spaces
5	Sem V	Community	Identity
6	Sem VI	Neighborhood	Form
7	Sem VII	City	Systems
8	Sem VIII	Internship	Practical experience
9	Sem IX	National	Master Planning
10	Sem X	Discipline	Thesis

Fig. 11. Classification of Activities & deliverables *(Source: Author)*

Report	Documentation studies	Analysis	Illustrations	3D - Physical simulation	3D - Digital Simulation	Building Drawings	Details & Specifications	Quantification	Schematic Diagrams	Presentation work
Pre-design DBR, Design development , Design implications., Interviews, visits, surveys, Standards & regulatory aspects, industrial practices, Climatic studies, calculations, Innovations, Exposure & Collaborations	Site physical context, Building resource context, Services context, sustainability context, architectural and social context, Universal design/barrier free design strategies,	Site analysis for external factors outside of plot, Plot analysis, User aspirations/needs, Functional efficiency, SWOT, design based case studies	Site experience, user experience, self explorations, aesthetical review, conceptual	Massing studies, Volume stacking, space connectivity, workability of designs, life scale elemental models 1:1 scale or similar.	Thermal performance , Light & Ventilation, radiation	All layouts, sections, elevations	Buildability, response to weathering, ease of operation, organizing for an aesthetical aspect	All kinds of aspects and items in a project that require to be quantified in numerous ways	Zoning of activities on site & plot, interdependencies of activities,	Design USP, Axo, Perspective, 3-D Digital, panel/Folio/ Digital Folio, Walk-Thru, Augmented Reality, Virtual reality screening

VII. CONCLUSION

Fig. 12. Design Process - A Generic Inquisitiveness Diagram *(Source: Author)*



To induce curiosity means to insitigate the desire to learn anout something, the act of keeping an open mind always by not accepting conventions alone as the given, by re-looking at the existing to find newer ways of looking, the act of By addressing the points put forth in the Academic model and the Pedagogic model in this paper, it is feasible to induce sufficient curiosity at various stages of working, of teaching and of learning in the Architectural education process. No process is full proof and is always in a continuous state of evolution and progression. Thus the diagram in this concluding section is an indication of the cyclic and closed loop nature of this inquiry which shall progressively keep moving in and out by addressing the knowns emphatically and seeking out the unknowns as time allows.

These aspects can be taken over for further relevant scrutiny as per the syllabus and context of the place. That shall offer a better platform to make the outcomes relevant. The structure or framework offered here through these aspects is at once generic but specific to the set of values from the MU syllabus. This can vary from place to place and so can the architectural concerns be varied from place to place. Thus due to this quality of subtle generic-ness and implicit contextual-ness, this framework is adaptable to the varying nature of information that it shall address in any place or context like wise. This entails its resilience in the longer run from a structure point of view.

Due to the wide variety of parameters that can be tweaked to ones requirement for teaching and learning, thus this framework also stands to be useful and inclusive to the wide differences of ideas and thoughts of the faculty fraternity as well as the learner students fraternity. The main core of this framework is the fundamental or significant value of a curious approach to learning and teaching, thus in future too this framework can be modulated to suit the requirements. There in lays the blue print of mitigation of variables and continuation of core fundamental principles of the architectural education at large.

[i] Pallasmaa, J., 2013. *The Eyes of the Skin*. Hoboken: Wiley.
[ii] https://www.ugc.ac.in/ugc_notices.aspx?id=NDE2Nw==
[iii] Einstein, A. and Shaw, B., n.d. *Einstein on cosmic religion*. 1931, pg 49
[iv] Kolb, D., 2014. *Experiential Learning*. [Erscheinungsort nicht ermittelbar]: Pearson FT Press.