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Human Cognition Induced Urban Realm - New Directives

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Abstract

Architecture should invariably mirror the aspirations and achievements of a society without forsaking the contextual identity of a region. Habitat realm should always be appraised contextually with reference to a given time and place; cities evolve as an indicator of advancements in a society. Nevertheless the anchoring notions of contextual regionalism and sense of locale are often lost in the days of contemporary and unsustainable global practices. The imageability of urban habitats all over the world have started to be characterised by a formal homogenous imageability; having concrete links to globalisation and modern construction technology. In this retrospective of changing times we should realise that the basis of meaning formation in cities should not be associated with a universal de-contexualised knowledge base. The real issue is to develop cognitive strategies to help designers establish a link with the cultural rootedness; diversity and aesthetic sense of a locale. This would make the habitat design contextually relevant thereby establishing a sense of possession and distinctiveness. This should hold true while revitalising existing habitat realms as well as while conceiving new interventions at micro and macro settings. A theoretical proposition with descriptive rationale is envisioned to facilitate cognition, explain appraisal styles, rationally define the process and classify the parameters involved while choices are being made.

Keywords: Spatial Characteristic; Conditioning; Cognition Theory; Collaborative Integration Framework;

1. Introduction

We can relate settlements to any form of human habitation with certain structure based on native organic pattern or a planned development, gratifying to needs of a certain density of population. "Human settlements contain people and societies in a physical environment consisting of natural and man-made elements" (Doxiades, 1968, p. 21). In developing countries there is definitely an evident rift between urban and rural settlement patterns. The urban pattern is a result of the relationships between people and their social, economic and physical environments. "For all that, the city is one of the most remarkable, one of the most enduring of human artifacts and human institutions"(Kostof, 2001, p. 40).

Reviews of succession of settlements indicate that topographical influences were a major factor in determining the affluence and growth continuum of a society. Many of these settlements were located along

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potent rivers and lakes, in deltas or along coastlines, cultivated eco systems and mountainous terrains. Whatever the context of the topographical setting and other influencing indicators might be, the inhabitants soon influenced their urban environment to mould the micro as well as macro settings and modify it according to their needs. "The socio – spatial dialectic, as it has been termed, is a continuous two – way process in which people create and modify urban spaces while at the same time being conditioned in various ways by these changes " (Andersen, 2003, p. 3). Thus urban form is not only the architectural form of the city; it is also a cultural manifestation. These statements provoke thought and point the direction of progress to the critical significance and vitality of the role of society and culture in the progression of a settlement pattern and resultant built environment. "Great architecture and ambitious architectural theory relates architectural progress with social progress" (Sigler, 003, p. 226).

The evolution of settlement patterns footprint in India dates back to the ancient civilization that existed centuries back along the River Indus. Hindu civilization proper did not begin until a thousand years later with the emergence of the Aryans. Notwithstanding the cause for the cataclysm that wiped off the earlier civilisation its remains could still be seen in the structural form that continued. The beginning of the rock cut and brick-and-stone architecture was the work of Buddhism. The historical evolution of cities can be later traced to the Hindu consciousness, resultant treatise of Vastu Shastra and the manifestation of Vastu-purusha-mandala concept sculpted to greatest glories by various guilds patronized by rulers spearheading the legacy of monarchy. These developments were followed by Mugal Empire emperors consolidating their rule over Hindustan and there patronage for erecting marvelous cities. Epic sagas of built environment realizations thus realized were trailed by the English East Indian Company and the Colonial influences. Post Independence, longing for a national character soon influenced the development approaches of the nation and its democratic leaders.

The interpretive paradigm is identified for the framework of this particular paper. Descriptive mode of approach is augmented by qualitative mode of study. Paving way for a research paper that would explain the basis for commencement of thought and action in decision-making process with respect to urban habitat realm. This paper could become the basis for qualitative appraisal of various generative factors and influencing parameters in future; the domains that provide source of cognition in a progressive manner.

2. Conditioning and Review of Spatial Realm

Architectural identity is a 'latent' quality rather than an inherent quality. It's only upon identification that architectural expression of identity can manifest. Architectural identity of a locale / part of city could often be referred to as the biography of its people - a collective identity, which has evolved with time through profound behavioural and materialistic convergence. Resulting in identifiable whole characterized through built environment and its occupants.

The basis for formation of credible insight with respect to a built environment by an individual could be reviewed by initially realising the ability as well as manner with which he acts. In other words, the way a person is able to comprehend, recognize and experience spaces and relate it to its spatial function and quality. In the case of designers the awareness and understanding of the emotive expression that's induced in them is quite critical this initiates an approach or acts as the trigger for imaginative simulations and creativity while they are assigned with a task.

A proper understanding of the Kolb Experiential Learning Theory would shed light into the human intellectual response system of approaching learning, interpretation, evolution of personalized program and so on. Further retrieval of already acquired inputs to practical applications in a wider context would be drastically based on individual - independent appraisal and valuing mechanism.
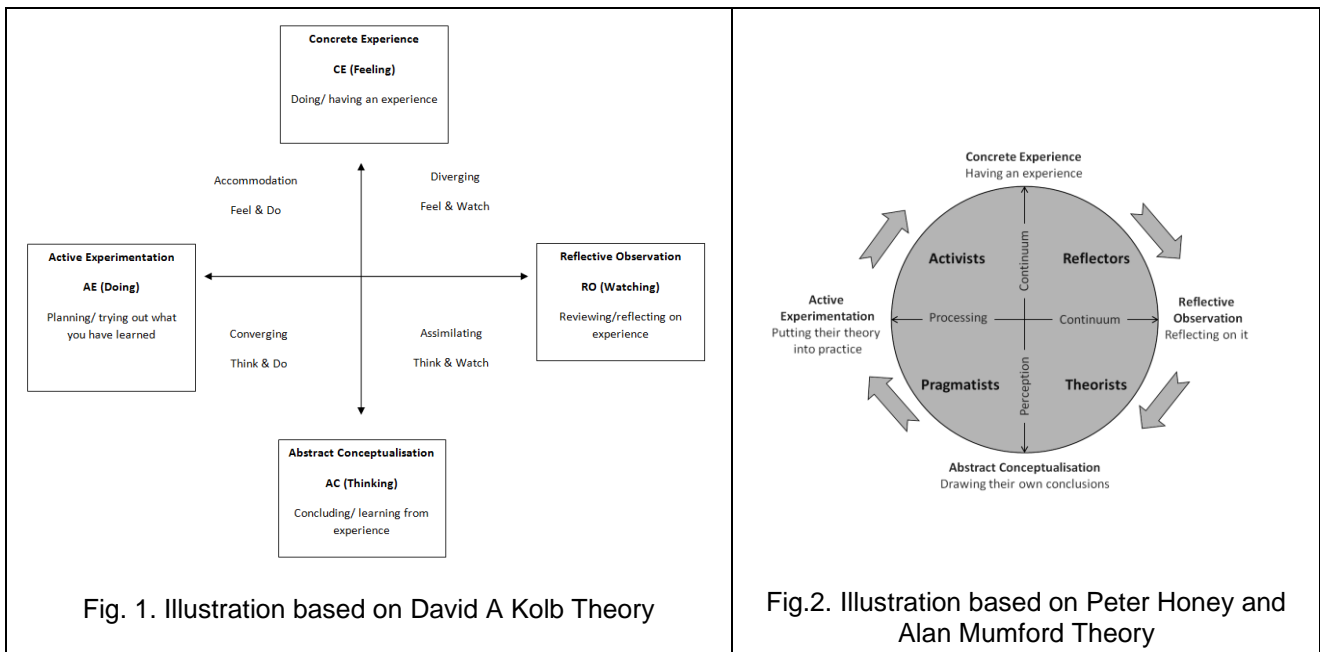
David A. Kolb, published a remarkable book entitled Experiential Learning: experience as the source of learning and development. The fundamentals of his theory are grounded based on similar research work such as: The Lewinian Experiential Learning Model, Dewey's Model of Experiential Learning, Piaget's Model of Learning and Cognitive Development and so on.

In Kolb's opinion, the learning process can be reduced to two primary bipolar dimensions (i.e. dimensions with two poles or extremes), incorporating the four learning modes. One of these dimensions has concrete experience at one pole and abstract conceptualisation at the other, and the other dimension consists of active experimentation at one pole and reflective observation at the other (Jerling, 2003, p. 136).

A rational basis is always required to correlate – explain of how people perceive the various dimensions that contribute to the space – making and resultant architectural realm. People tend to have preferred appraisal styles which help them in evolving better cognition patterns while interacting with the external world.

The cycle comprises four different stages of learning from experience and can be entered at any point but all stages must be followed in sequence for successful learning to take place. The Learning Cycle suggests that it is not sufficient to have an experience in order to learn. It is necessary to reflect on the experience to make generalisations and formulate concepts which can then be applied to new situations. This learning must then be tested out in new situations. The learner must make the link between the theory and action by planning, acting out, reflecting and relating it back to the theory.

Fig. 1. Illustration based on David A Kolb Theory

Fig.2. Illustration based on Peter Honey and Alan Mumford Theory

The propositions were further developed by Peter Honey and Alan Mumford, based upon the work of Kolb, and they identified four distinct learning styles or preferences: Activist, Theorist; Pragmatist and Reflector. These are the cognition patterns exhibited by individuals while engaged in developing a better understanding of the world around them.

Table1 Appraisal Styles and Activity Index   Source: Author

Kolb	Honey and Alan Mumford	Architectural Appraisal Linkage Sense of Place & Cognition
Accommodator	Activist	• These people develop cognition about built environment by direct interaction; physical contact and activity based appraisal. • They prefer experiencing built environment, analysing facts, applying finding in similar circumstances, drawing conclusion and so on. • They indulge in explorative study; often don't follow a defined line of investigation. • Prefer to learn through experience and self exposure rather than guided transition of knowledge.
Diverger	Reflector	• These people develop cognition about built environment by observing and thinking about the built realm. • They raise questions in order to constructively work towards proper answers and assessment. • This approach leads them to collect data and logically analyse the built realm under review. • Prefer to learn by indulging in lot of interactive communications with designers, users and professionals. Thereby evolving better perception about their acts; resultant spatial morphology and functionality.
Assimilator	Theorist	• These people develop cognition about built environment by probing the theories and concepts that form the basis of the built realm. • They review the models, concepts and facts behind the overall ideation and execution. • Prefer to develop a broad understanding of the scenario; choose to move from the macro level to micro level details. • Prefer to learn through rational approaches via logical steps keeping alive the explorative and inquisitive mind. These acts would definitely lead to better understanding of built realm and provide new directives.
Converger	Pragmatist	• These people develop cognition about built environment by searching for facts, so that these findings can have immediate or refined applicability in resolving contextual issues. • They pursue an action research approach in reviewing the built realm under examination. • Prefer to develop a better understanding of the contextual issues based on proper analysis of precedents and also apply innovative thought process to bring about pioneering approaches. • Prefer to develop better understanding by indulging in rigorous pursuit with more focus on practicability and application rather than theorisation. • They prefer to work by themselves, thinking carefully and acting independently.

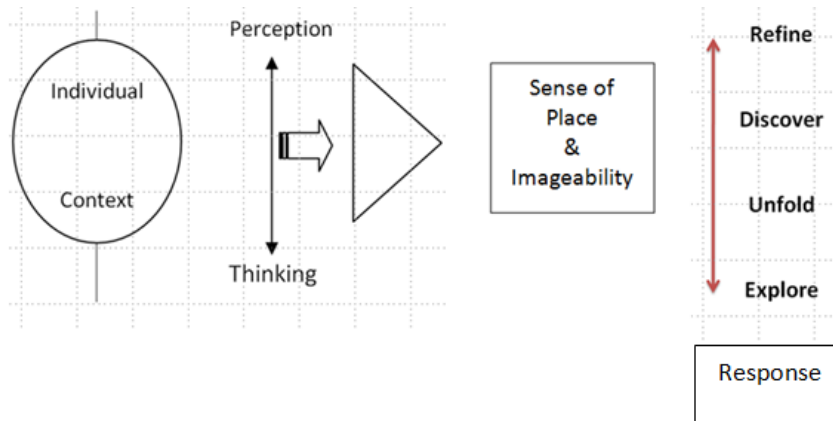## 4. Fundamental Activity Cognition Theory

Fig.3. Activity Mapping - Source: Author

In the present scenario of globalization there is a decisive need to recognize and understand the urban realm in terms of user groups, functions, built environment, infra structure management, science & technology and behavioral aspects. The significance of appraisal from the perspective of an integral whole with critical importance to human being and his evolution would lead to effective Habitat Design.

Evolutionary compulsion forces human beings to establish a system of relationships between the physical body and the human mind's mental perceptions, which enable us to experience the world and our existence. These relationships provide us with our sense of wellbeing, our sense of belonging, and our deeper sense of who we are. Through the physical and the visual aspects of human perception, the body managed humankind's earliest interactions with the world (Masden).

From the view point of perceiving and reflecting on built environment, the ability to comprehend, recognise and experience spaces in terms of spatial quality, functionality and form is quite important. The overall perceptual identity thus evolved often gives rise to cognition of associated attributes being conveyed symbolically by a built form like morphological, sociological, anthropological, historical etc.

In order to bring about better clarity and understanding to the phenomenon of meaning formation with respect to sense of place and cognition, based on available literature a new premise is put forward. New theoretical ideation is constituted by four stages of information processing: Exploration, Unfoldment, Discovery and Refinement have been derived based on precedent studies of teaching and learning theories.

As illustrated the new theorisation intends to map the human activity sequences during the act of cognition. The understanding of human cognition and induced activity helps us to logically approach the process of learning – meaning formation and understand the various activities involved at respective stages. The overall process is cyclic, interconnected and progressive as indicated in the illustration, paving way for self realisation and development of understanding about the specific contextual issue at hand. It is configured in such a manner that it is rational and in order, the new proposition has universal application irrespective of discipline.

From the perspective of architecture the overall process relating to sense of place making and evolution of imageability is simplified using this proposition, by explicitly describing the process involved and activities

associated at each stage. These activities collectively bring about the concept of sense of place in an individual while exploring landscapes of human habitation.
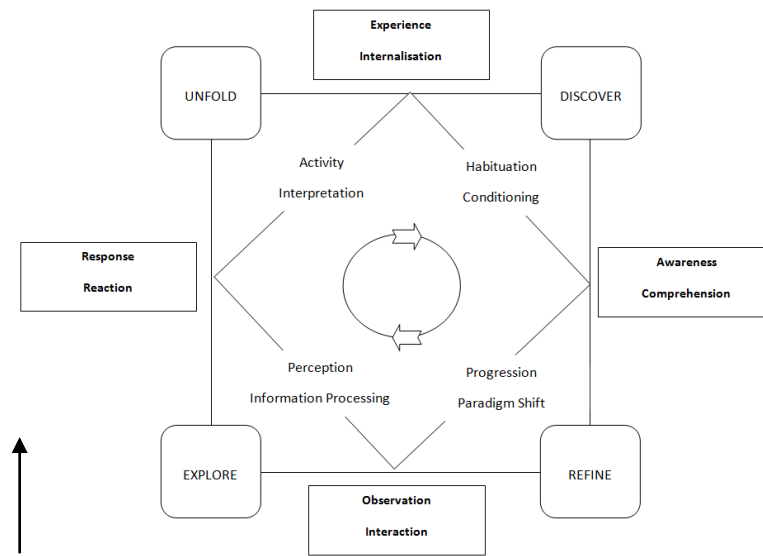

Fig: 4. Fundamental Activity Cognition Theory - Source: Author

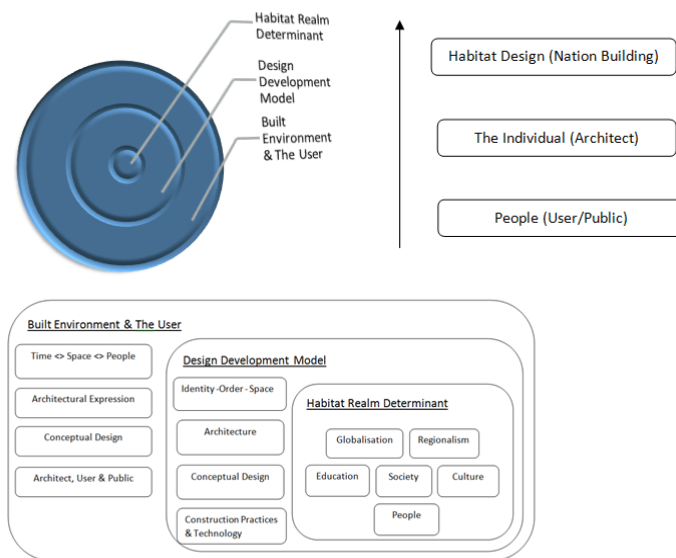## 5. The Inherent Ideation

Fig: 5. Collaborative Integration Framework

In consonance with Gandhism Philosophy; thoughts relating to nation building, social order, co –existence and continuity were preached as follows;

….ever widening, never ascending circles. Life will not be a pyramid with the apex sustained by the bottom. But it will be an oceanic circle whose centre will be the individual always ready to perish for the village, the later for the circle of villages, till the last… becomes one life composed of individuals, never aggressive in their arrogance but ever humble, sharing the majesty of the oceanic circle of which they are integral parts. Therefore, the outermost circumference will not wield the power to crush the inner circle but will give

strength to all within and derive its own strength from it… No one… [will] be the first and none the last (Brown, 2008, p. 158).

This concept of collaborative integration and mutual responsibility could be related to the design development process in architecture and urban design by correlating the concept of circles of activity and accountability to spatial design development. The main constructs under consideration would be: People (Users/Public), the Individual (architect), and the Habitat Design (Nation Building). Such an approach would provide for circles that feature domains that characterise attributes that form the building blocks of built realm. Design development is a continuously evolving process, responding to changing needs with time. Generally the design decisions are often based on cognitive knowledge structure of the individual (architect).

5. Conclusion

Effective externalisation of the approach associated with addressal of a habitation design issue and realisation of habitable spaces is always a challenge. An approach which helps resolves this concern of design decision making and related transmission of learning in studios is achieved in the form of a theoretical model: The Architectural Design Development Model; a graphical - visual illustration with cognitive reasoning.   The inherent ideation plays a pivotal role in the whole process of design evolution.

The development process can be reduced to two primary bipolar dimensions (i.e. dimensions with two poles or extremes), incorporating the four activity domains. One of these dimensions has architectural design at one pole and design process at the other, and the other dimension consists of process model at one pole and design concept at the other.   The cycle comprises four different stages of design decision making and can be entered at design conception level but all stages must be followed in sequence for successful results. The learner must make the link between the theory and action by ideating, planning, executing, reflecting and relating it back to the theory. There is a collaborative engagement between these domains and the confluence is an intellectual process capable of resolving spatial issues related to habitat design requirements.
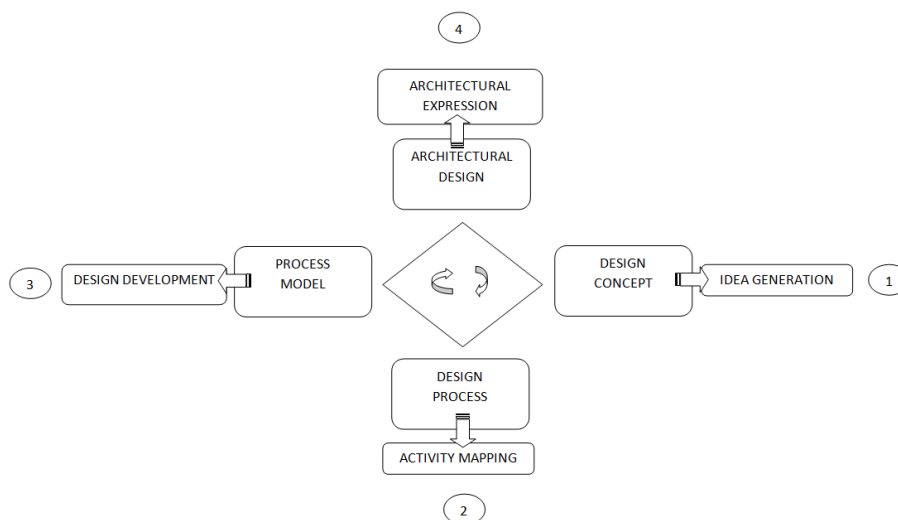

Fig: 6. Architecture Design Development Model

The inherent ideation attributes would enhance habitat design conceptualisation with better understanding of attributes like user groups, historic lineage, progressive development dynamics, sustainability and built environment, science and technology, human behaviour and ecology and so on. Understanding the existing sphere of influence and relating it to a theory would enhance habitat design propositions.

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