Present Scenario Of Architecture Education In Relation to the Concept Development

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Abstract— Learning as an interactive process is an important issue in architectural design education. This article looks at architecture students Concept development approach in architecture design with the Design Process. We have witnessed through the literature and practical experience that a large number of students are not able to work on the concept as in architecture education. Concept generation is very important for the design. From the first year of architecture education, students are confused about what is a concept, how it can go with the design, what will be the process to transform concepts into design products. Architecture is an art in which one feeds it's all ideas, imagination, thinking, and soul. Vitruvius asserts that the basic factors of architecture are providing firmness, commodity, and delight. Concepts play a key role in the development of innovative design solutions for many architects and designers. Even though there is no sharp distinction between the process of production and the process of interpretation of designs, an "intended" interpretation usually guides the actions of the designers.

In Architecture, people are confused that how we develop our ideas into a real thought or say concept into a product or final product. In architecture, we saw a huge gap where students weren't able to develop a concept or even many of them didn't know what is a concept. If some able to draw a concept they did not able to transform it into a final product. The paper will deal with the issues which the student of architecture faced during the concept development in the design process. For this various theory of concept development studies to write this paper. To analysis different types of design, their role, importance, etc… concept development in each design. The methodology for this thesis shall be as follows Data gathered from digital resources on concept development, design process, and Models shall be studied, collated, structure, and analyzed and Opinions of the students and faculty on these models would be elicited through questionnaires, interviews, discussions, etc. The feedback received would be collated, structured, and analyzed. The research will be conducted to evaluate the effects of learning style preferences on the performance of design students in a design process. Based on the literature and case study, Inference and conclusion are drawn.

Keywords: Architecture, Design Process, Design Studio, Concept Development, Creativity, Critical thinking, Thought process.

1 INTRODUCTION

"Tell me and I forget, teach me and I may learn, Involve me and I learn" (Xun & Knblook, 1990). This quote is very much related to the Architecture where we can develop our skills and learning when we are involved in our design exercise. In architecture, the Design studio concept plays a very vital in the development of the students' ideas into the design process. The challenge a student faces today is that the concept is not transformed into the final design. Students also try to think a lot and out of the box too but when it comes to paper, it seems that the vision and the main idea of the design are missing. The design process is a very important process of design by which one can easily understand the architecture. It is systematic proven and being developed from time to time by many scholars as per the need and the situation. The design process has many stages for the development of the students as well as fir faculty.

Architecture Education plays a fundamental role in preparing students for the professional environment. It remains crucial to establish progress and social development even though it continues to face important challenges. (Charalambous & Christon 2016). Questions rely on the fact that how Architecture education syllabus might be updated, how students are active to participate in the learning process of their curriculum. Architectural design can be considered as a problem-solving activity in which the student is required to generate a solution in the form of a concept and drawings. Learning as an interactive process is an important issue in architectural design education. In general, the architectural curriculum is composed of fundamental courses that develop design knowledge; technology-based courses that develop the scientific formation of architecture; artistic based courses for strengthening architectural expression; and, finally the design courses, being a combination of the former three and constitute the most crucial part of design education.

It is claimed that there is an experiential learning process in design education within the environment from the very beginning to the end of any design problem.

1.1 Architectural design studio

The design studio process is quite important in design education since it is the core of the curriculum and all the courses taught in design education are related to the design studio.

The critique process held in a design studio is not only a lecture was given but also a social interaction between the teacher and the students and among the students.

It can be stated that the treatment of theoretical issues and the preparation of the architecture student for the world of practice are structured by the human relationships set up within this space. (Symes, M).

Design serves as a mediator between mental activity (invention) and social activity (realization)35. It is an open-ended process of problem-solving, and design theory functions as an instrument theory that supports the cognitive abilities of the designer (Tate, A).

In solving the design problem, the extent of the experience of the designer is more important than the facts and rules. This is a factor that can only be achieved through time and the design studio in architectural education is the first place that the candidate of the profession can get his/her first experience in the profession.

2. Literature Review Architecture design studio

Numerous definitions of "concept" can be found in the design-related literature. They cover a wide range of meanings, such as idea, notion, scheme, plan, system, figure, symbol, prototype, paradigm, abstract object, mental representation, description, solution, and proposal. Among these definitions, the concept is defined as "the figure of an object, along with other representations, such as attributes or functions of the object, which existed, is existing, or might exist in the human mind, as well as in the real world" (Taura and Nagai, 2013). The concept also refers to the mental representation that the brain uses to denote a class of symbols that are inferred from the physical material (Carey, 2009, Murphy, 2002). In this study, the concept is defined as "the mental map or the inner blueprint that assigns meanings, links components, enhances creativity, and guides the design process to produce a design product."
Concept development refers to the basic understanding that is necessary to make sense of one's world. This includes ideas about the self and others, objects, and the environment. This foundation's understanding is crucial to communication, travel, and independence. While typical children usually develop an understanding of basic concepts through incidental learning, children with a combined vision and hearing loss must often be taught these same concepts through repeated exposure in an intentional manner.

2.1 Theories on concept development

"I depend entirely on concept diagrams, I consider them my secret weapon. They allow me to move afresh from one project to the next, from one site to the next."
STEVEN HOLL one of the most influential contemporary American architects, acknowledges his dependence on open-ended conceptual frames rather than on the existing building morphologies or typologies Concepts play a key role in the development of innovative design solutions for many architects and engineers. Even innovative design solutions an "intended" interpretation usually guides the actions of the designers. Concepts are used to frame some general design approach. Steven Holl one of the most influential contemporary American architects, acknowledges his dependence on open-ended conceptual frames rather than on the existing building morphologies or typologies. The notion of a "concept" suggested by Holl coincides with the notion of "design concept"
ULLMAN (1992) examines design concept formation in designing or redesigning devices with specific functionality, within the context of mechanical engineering.
The key feature of Ullman's approach is the generation of multiple concepts for the same design task, in two steps:
a) functional decomposition and
b) concept generation from functions. Functional decomposition involves breaking down the needed function of a device as finely as possible, and with as few assumptions about form as possible.
c)Concept generation involves listing conceptual ideas for each function. Conceptual ideas come from the designer's expertise, enhanced through patent searches, brainstorming Gero (1998) draws examples from the genetic engineering of evolutionary systems to show that design concept formation is based on the emergence of patterns in the available design representations. The key feature of Gero's approach is that the observed patterns form the basis of concepts, which can be memorized and remain available for future use. Finally, Richards et al. (2007) present an analysis of the use of frameworks in electrical engineering, to identify practices to improve the development of systems. Three are the key issues of this discussion: the important role of artifacts in system design, the benefits provided by frameworks, and the measures-of-effectiveness for assessing the value of frameworks.
Like Schön and Gero, this research focuses on creative design and not on re-design. Further, the focus is on architectural design as opposed to designing in mechanical or system engineering. The motivation for the research stems from the observation that architects use conceptual frameworks that do not necessarily derive from a specific design setting. Concepts from domains extraneous to design are used as well. The paradigm demonstrates how the concept of porosity was redefined by architect Holl in a new tectonic/urban context. In this retrospective presentation, formal devices such as shape algebras and rule schemata are employed to capture Holl's tectonic version of porosity. A comprehensive analysis of shape formalism exists in Stiny (2006), and a discussion on the creative/expressive character of spatial rule systems exists in Knight (2005).

2.2 Problem related to design studio

Problems related Design Studio in context to the research
Concepts play a key role in the development of innovative design solutions for many architects and designers. Even though there is no sharp distinction between the process of production and the process of interpretation of designs, an "intended" interpretation usually guides the actions of the designers.
Concepts are used to frame the general design approach.
Design concept formation will be the research topic. We have witnessed through the literature and practical experience that a large number of students are not able to work on the concept as in architecture education. Concept generation is very important for the design. From the first year of architecture education, students are confused about what is a concept, how it can go with the design, what will be the process to transform concepts into design products.
The word design is used every day but defines contrarily by different people. Thus "Design" is both a noun and a verb, it can be referred to as an end product or Process. To some extent we can see design as a non-specific activity and yet

there appear to be real differences between the end products created by designers in various domains like Pragmatic Design, Typological Design. Analogical Design. Syntactic Design. What is a Process: A process must have input and output.

2.3 Introduction to the design process

Processes have a fractal quality. You can zoom in or out, increasing or decreasing abstraction or specificity. You can add more detail—dividing phases into steps and steps into sub-steps, almost infinitely. Processes rarely have fixed beginnings or endings. You can almost always add steps upstream or downstream. The design process is a route from beginning to end. The common idea behind all these 'maps' of the design process is that it consists of a sequence of distinct and identifiable activities that occur in some predictable and identifiably logical order i.e RIBA, Markus/Maver, Rzevski, Jones, Koberg and Bagnall, Michael J. French, Bryan Lawson, Jane Darke

3. METHODOLOGY

The source of data used in this research were primary and secondary data. The primary data was obtained by the researchers based on the analysis of the data from an expert interview, questionnaire from architecture students, and faculty. The secondary data was gotten from the different research papers related to the research topics.

3.1 Research objectives

This study was carried out to identify the process of architecture students use in arriving at their design with the concept development. To understand the issues and challenges faced by the architecture student in the design studio.

3.2 Research method & data analysis

Two methods were adopted in carrying out this study, a survey method in which a questionnaire is framed for an architecture student as well as for the architecture faculty containing close and open-ended questions were asked and expert interviews from the head of the institutes.
Data collected were analyzed using static package fr social science (SPSS)
An experiment on Architectural design studio

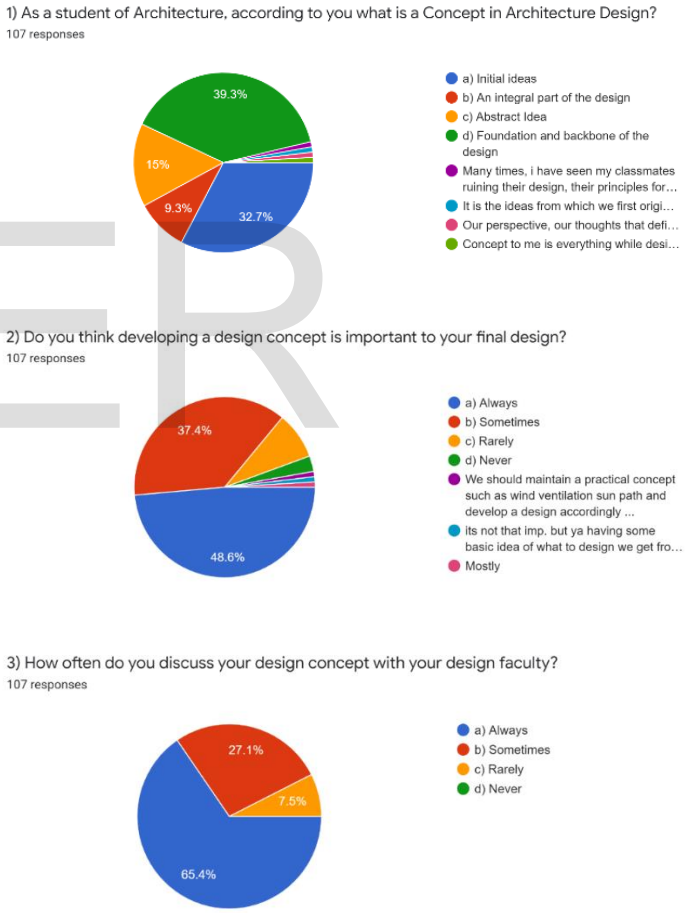
4. A EXPERIMENT ON DESIGN STUDIO

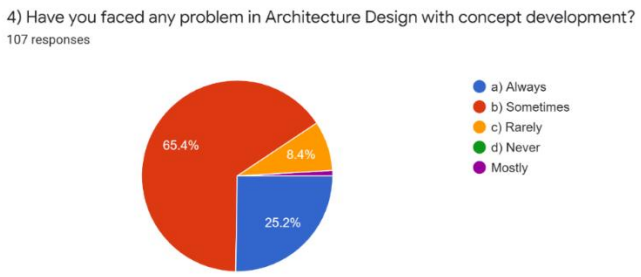
An experiment was conducted on the architecture design studio. An open-ended questionnaire was floated for students and faculty related to Concept development in Architecture Design Studio, a research study on aspects of the development of concepts and its transformation into the final product in architecture design studio i.e. Creativity, Learning style, critical thinking, and thought process. The objective of the questionnaire is to find out the issue and solution that will help out in the transformation of a concept into a final design.

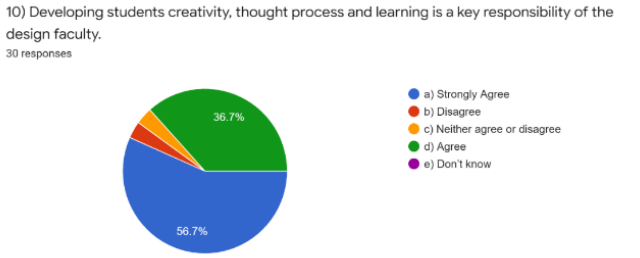
4.1 FINDINGS ON THE QUESTIONNAIRE

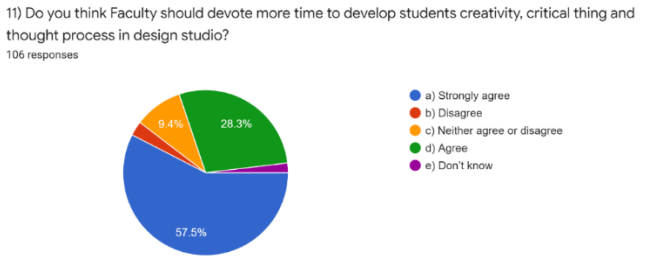
Questionnaire: descriptive method of research wherein the quantitative data were gathered using a survey questionnaire to determine the student and faculty perception on concept development in the architecture design studio.
Structure of the questionnaire: two questionnaires were framed one for the architecture student perception and another one for the architecture faculty perception towards concept development in the design studio.
Participants: 1st, 2nd, 3rd 4th & 5th-year architecture students of different architecture colleges across India. And architecture design faculty.

4.2 ARCHITECTURE DESIGN STUDIO: STUDENT PERSPECTIVE ON DESIGN STUDIO

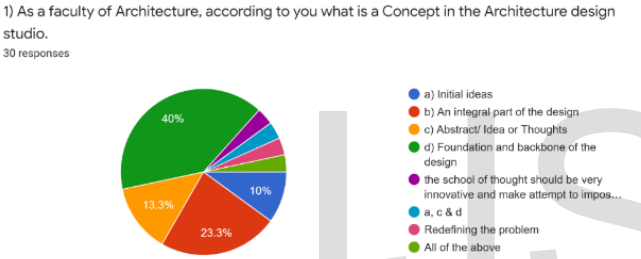


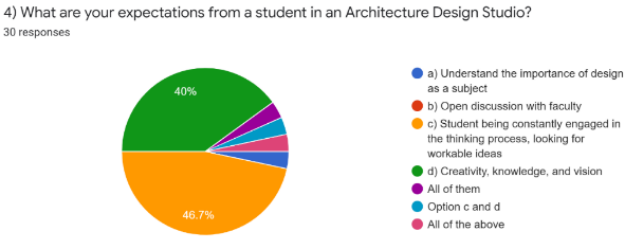


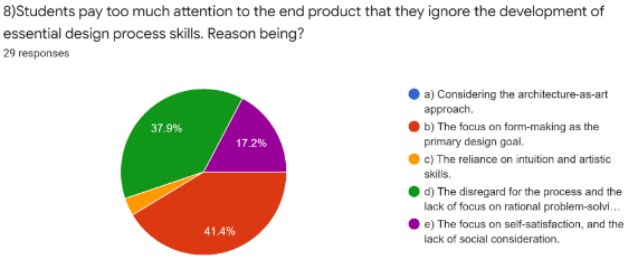




4.3 Architecture Design Studio: Faculty perspective on Design Studio







5. Results & Feedback

As can be followed from the findings of the study, Concept development helps to streamline the design process among the students. Architecture faculty find Concept development is a must for evolving meaningful designs. However, it has been seen that students are not ready for working more on the development of the concepts in detail because of lack of interest, lack of time, lack of discussions, and more focus on submission.

A common suggestion that came out from the survey and stated by both faculty and students was that the Concept is abstract, not concrete may change in multiple ways. As we go ahead or our design solutions materialize, the concept may be recast. So concept may be generated stay stage of the design process. It doesn't need to travel linearly. Process of converting ideas into tangible form. Evolving and giving meaning to build form through knowledge and wisdom. The concept forms the basis of design development. It shows designers take on the problem to be solved in a particular manner.

Faculty should allow students to think out of the box. Student Faculty Relation should not interfere with the design development. Everyone has the right to design in their way. Faculty should not force their own opinion over students. The design studio should be more and more inviting. Other than this, the faculty should be more and more friendly. Instead of enforcing their designs, they should focus more on the correction part to motivate the students even more.

Concept development should not be taken lightly, it refers to the thought process, combining the previous studies, old stories are taken from history, things that get stuck in mind visually, while watching any T.V series, movies, videos, playing video games, a person should also observe what is happening, concepts are everywhere, but along with the concept a person must also try to involve the typology and function of a building, when the process, the expected result, and concept combine only then can a design be called

creative, concepts are everywhere and transforming them is a challenge.

6. Conclusion and Recommendations

Concept development is a pedagogical process which focuses on the achievement of certain specified parameters like creativity, learning, critical thinking, and thought process, therefore is concerned with the design and ensuring that the contents, lectures delivery, activities, and assessment are all aligned to help students to develop concepts in the architecture design studio. Conceptual descriptions set at the early stages of the design process are used to frame some general design approach. Design concepts are introduced contextually and in parallel to a course of productive design action that is described and explained in terms of them. Interpreting the output of the design action confers meaning on the concepts. This allows concepts and design artifacts to evolve in parallel. In design implementation, the existence of a conceptual framework allows necessary revisions to happen within a framework of original design intents.

Intellectual Activity linked to creativity in design conceptual realization which forms the basis of any design visualization and later on physical realization could be depicted as the confluence of the following three components Knowledge, creative thinking, and motivation. Concept development is A must for evolving meaningful designs.

The concept emerges only in matured and experienced minds. At the age of students, it is limited to a physical form instead of a thought-form. Instead of asking students to come up with a concept, they should be asked to solve a design problem. Students should be given a problem instead of just requirements. The concept is abstract, not concrete may change in multiple ways. As we go ahead or our design solutions materialize, the concept may be recast. So concept may be generated stay stage of the design process. It doesn't need to travel linearly. Process of converting ideas into tangible form. Evolving and giving meaning to build form through knowledge and wisdom.

Further work can be done in concept development is the transformation of a concept into the product. A follow p study about the transformation of concept development can be done in architecture education and include the views, insight experience of the experts, head of the institute, Architecture faculty, and other personnel.

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