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Participatory Approaches in formative years of Architectural Pedagogy

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ABSTRACT

These days, participatory design processes are being encouraged and applied to urban design and planning, with mandatory public participation in processes of master planning or environmental impact assessment (EIA). Unfortunately, projects mandated to be participatory in nature are usually dominated by top-down methods with no real sharing of powers or decision-making authority. This paper postulates that for effective community participation, participation should start in the architectural design studio. The success of a participatory approach depends on the shift of the mindset of young architects, when they recognize that their role is not of a leader but that of a facilitator, that they are not subject experts, but process experts. When they understand this viewpoint, they are likely to act as a catalyst in the design process, unlike 'be in control' as our current architectural pedagogy teaches them to do. Participatory approaches demand that we redefine the relationship between the design professional and the stakeholders. This study attempted to investigate and understand how participatory approaches can be applied in the architectural pedagogy, striving to learn its benefits, issues and concerns. It also evaluated the efficacy of the method by interviewing students, faculty and jury at the end of the semester.

Keywords: Participatory approach, Architectural design studio, Co-design, architectural pedagogy.

1. INTRODUCTION

While explaining the concept of participatory approach in design, a student wanted a clearer explanation citing that most design data is derived from people studies, how is design not participatory in nature then, when all information comes from people. It is important to understand here that the crux of Participatory approaches in planning and design revolves around the principle of "shared ownership in decision-making". The process is truly participatory when the stakeholders have a say in the final design solution. Just like an architect discusses the design of a residence with the owner at every stage and the design moves forward towards finalization only after the approval of the client, the same is desired in all building types and urban level interventions. However, this is not the case. Architects, urban designers, urban planners and allied design professionals collect their preliminary research data from people, but the process stops there. Once design concept stage sets in, they are the sole decision maker in the process, with inputs from other experts and the immediate client. The end users, the people who would be using the facility, are not involved in the design process thereafter. Participatory approach means going back to the people for feedback on the design concept from time to time till the design is finalized. This process, also known as the bottom-up approach as opposed to the conventional top-down approach, which has been common practice till now, has gained momentum in the past few years with many success stories.

1.1. ESTABLISHED APPROACH IN ARCHITECTURAL DESIGN STUDIOS

The product of the architecture design process is a building that is used by people. Similar disciplines that design for people, like say, industrial design, simultaneously utilize participatory and user-centered research methods to achieve a product that is appealing to the end user. Prototypes are created and user studies undertaken and comprehensive solutions that resonate with user needs achieved before launching the final product in the market for general use. Users are integrated in most stages of the design process.

This involvement of the stakeholder is entirely missing in architectural pedagogy as is practiced now in most colleges in India. In a typical design studio, students are required to design a particular building type on a given site. The usual methodology that follows is

STAGE 1: PROGRAM FORMULATION

Understanding the building type through primary and secondary research methods. Students undertake literature reviews and case studies of the given building type to understand its specific requirements, consider the site-specific conditions; the on-site and off-site factors that would help shape the design of the building and resort to Time Savers standards and local building codes to generate an area program.

At this stage, most of the information is derived from architectural precedents that have answered similar problems. Learning in Stage 1 is extractive in nature. Research methodology usually include interviews and field observation studies which rely on obvious and noticeable physical user needs. This, however, does not generate any information on the psychological needs of the users, unless a specific study is undertaken. The best architectural designs are taken up for literature reviews and case studies and even though these may have considered user preferences, these design decisions may not always be apparent through field observation studies.

The building in question is designed for a 'universal' user. The 'context' is global. So, studies conducted at this stage are also universal. The various discussions that ensued between the architect and the client, the design decisions that led to the final design, as we see it, are not evident through simple field observation studies. Very often, due to logistics, accessibility issues or non-availability of the architect of the project, students do not get insights to various contextual decisions taken for the project.

In most cases, a hypothetical site is chosen with substantial degrees of assumptions and simplifications. When real site locations or real-life projects are rarely taken up for the architectural design studio exercise, the definition of the context becomes ambiguous, and the design studies are interpreted for a 'general' user.

STAGE 2: DESIGN PRODUCTION

A series of experiments and trials to find the best solution for the design problem, this stage requires creative thinking skills and uses a variety of tools such as drawing, making models and brainstorming with other students. A typical architectural design studio relies on the critique obtained from the faculty to better the design. The design process is iterative in nature, going back and forth from the drawing table to receiving feedback from the design faculty. While designing, the student addresses a larger group of 'people': This group is genderless, age-less, able and irrespective of incomes. Gender, age, disability, income groups etc. are considered only when the design is specifically for these groups like at an old age home, an orphanage, rehabilitation center for the disabled or low-cost housing. Since the stage 1 studies were for the 'universal' user, the larger group of 'people', the same is mirrored in the design.

It should be noted here that nowhere in the process, does the student get an opportunity to have a client to discuss the design with. "Historically, the education of an architect has been a highly individualized pursuit, focused on the development of an individual skill set that seldom includes collaboration beyond that of student and professor" (Thomas & Dockter, 2019). While in architectural practice, an architect collaborates with other specialists/ experts continually, this exercise is rarely carried out in the design studio in academia. Hence, architectural pedagogy is plagued by an untruthful representation of professional reality. "A project-type design exercise encourages students' understanding of design theory – not to practice design" (Iveren & Buur, 2002). Without a client or any other external expert, the faculty becomes 'the client' and 'the expert' and design progresses accordingly. The faculty is seen as a figure of authority, the sole knowledge provider and the students listen and follow what the teacher says. The faculty is regarded as the "experienced one". This limits discussion and active questioning. In fact, Clark and Brown (2013) critique "the traditional architecture studio of restricting the creativity of students to the restraints of pleasing the instructor".

The process of architectural design in the studio is a rather 'Isolated and Individualistic' process, both in the physical and formative sense. Without collaborations of any kind, or assimilation of external information, the student indulges in internal dialogues and debates, never fully confident of "knowing". According to Chivers (2015*), "*the process of developing an idea also becomes a private, almost shameful act, in which not knowing the right answer is an admission of failure rather than an opportunity for creativity". Some equate this as freedom – the inward-looking characteristic of an artist results in better creative outputs. However, "Genuine freedom is intellectual; it rests in the trained power of thought… If a man's actions are not guided by thoughtful conclusions, then they are guided by inconsiderate impulse, unbalanced appetite, caprice, or the circumstances of the moment". (Dewey, 1910).

The pedagogy places the student as the sole thinker for solving problems relating the design of the building type. And therefore, the solutions proposed, and the designs produced are 'their interpretation' of the problem. The student is developing solutions to local problems, without involving the 'local' anywhere in the process. Our prevailing architectural pedagogy positions the student as the 'trailblazer', who through their creative mastery must find solutions to the problems of the world. Unfortunately, this process is carried on for five years of architectural education, and by the end of it, it is ingrained in the minds of the architecture student, who see themselves as the front-runners of the project, who can create 'at their will'. Dasgupta (2012) calls it "a 'halo' that begins to form at the entry portals of the architectural school around the student architect gets progressively larger and correspondingly impregnable as the years go by. The graduating architect emerges as the 'special

one' as an answer to the clamor for the specialist in today's career driven society".

The possibility of having to scrap the design completely and start afresh because it doesn't appeal the client is an incidence that the student learns about only after his education is over, as a professional in design practice. In our current design studio approaches, needs are addressed, preferences are not. The faculty feedbacks are objective, never subjective; these are usually guided by some kind of reasoning and logic, never preferences. As expressed earlier, the design process relies on extractive methods rather than a possibility of mutual learning. This must shift: the student who always seemingly had total design control in the design studio, suddenly encounters and must learn to enter a field of dialogue when in professional practice.

Concurrently, witnessed in the design studio is the preference for creating 'extra-ordinary' architecture, designs that are unique and ground-breaking. Design exercises encouraging students to think out-of-the-box expect grand designs. "This trend and affinity to promote and therefore produce such edifices of glory and glamour has remained the continuing strand of design choice-making both within architectural offices/ practices as well as the design studio" (Dasgupta, 2012). So, irrespective of the scale of the project, whether it is a community center, a dispensary, a hotel, a mall or an orphanage, the desire to express one's creativity is so immense that the final product in most cases, is ostentatious and extravagant and seems to be missing basic considerations of *'people'* and *'money'.* The discussions on the consequences of the design decisions on the economics of the project seldom take place. As Ashraf M. Salama (1995) argues, "the current architectural pedagogy socializes its members through high emphasis on form and abstract aesthetics while superficially adopting fragmented pieces of knowledge on technology, ecology, social sciences, sociopolitical and socioeconomic aspects". People, or the user group are considered from the viewpoint of the student and issues like changing societal needs and preferences, changing trends, politics, the complex intangible relationship of the site with the neighborhood etc. may not form a part of the deliberations. The discussions that do ensue do not necessarily concentrate on the real issues in real conditions.

2. WHY PARTICIPATORY APPROACH?

2.1. ARCHITECTURE IS A COLLECTIVE PURSUIT

Architecture, unlike Art, is not an individualistic pursuit. The built environment is too multifaceted and inter-reliant to be disjointed. The complexities of the environment cannot be controlled or shaped by a single individual and require application of new skills and knowledge.

To prepare architects for the growing complexity of the profession, contemporary architectural pedagogy has realized the importance of adding applied behavioral science subjects like psychology, sociology, anthropology, cognitive sciences etc. for better understanding of how buildings operate. While an architect requires sound understanding of 'function and structure' in terms of area/ space required, circulation, linkages between various spaces, construction technologies and methods etc., the built environment also includes human psychological needs of individuality, privacy, safety, territoriality, community belongingness, sense of place etc. These needs are specific to socio-cultural contexts and fluctuate with time, and necessitate to be an integral part of the design creation process, together with the triad of function-structure-beauty. According to Salama (1995), "design education is one of the fields that require innovative and creative skills and social responsibility that could be applied within two-dimensional and three-dimensional environments".

Design studios are best when a participatory approach is pursued, and students gain information from end users and professionals at various stages of the design process. Stakeholder perspectives differ and the architect is required to find a balance between, at times, conflicting demands. It contains a domain of knowledge and expertise that can pay off in many ways.

2.2. ARCHITECTURAL EDUCATION IS DISENGAGED FROM REALITY

As previously mentioned, current Architectural education is disengaged from reality. "Unlike other artists, architects must have real clients before they can practice" (Chappell and Willis, 1992). Meiss (1995), states that "a design studio shall not be a relation with two sides, in which one knows all and the other doesn't, the relation shall be a partnership of an experienced and an inexperienced person who are looking to understand information together". We need to move out of the conventional architectural design studio methods and look beyond.

It is imperative to find alternative teaching-learning methodologies, where a realistic version of professional practice is attained, where active participation is encouraged and where alliances with different experts is realized. By democratizing planning and architectural design production processes, the architect gains information on where to focus their efforts to propose a more practical, and perhaps a more sustainable solution. The architect becomes a part of the collective and their role is of an able facilitator, wherein they act as a source of globalized information at the local collective level. "Unlike local people, who often tend to have experience limited to a particular set of environmental circumstances, architects can provide an overview of issues related to the project or offer experience in a specialized field" (Day, 2003). They, then, can productively direct the collective dialogue towards an appropriate conclusion. In that sense, participatory approaches can be viewed as a way to bridge the "real

and the hypothetical, the process and the product, the objective and the subjective" (Salama, 2010).

2.3. ARCHITECTURE REQUIRES APPRECIATION OF CONTEXT AND CONTEXT LITERATE SOLUTIONS

One of the reasons why architecture fails is the disregard for the context. The conventional architectural studio is a model adequate for problem solving. Donald Schön (1985) argued, "Is not only how to pour the concrete for the highway, but what highway to build? When it comes to designing a ship, the question we have to ask is, which ship makes sense in terms of problems of transportation?". Perhaps, more than providing solutions, our foremost task is to ask the right questions and find the right problem.

Participatory approaches provide 'the context' which has been lacking in the architecture design studio. It provides the student with a 'local' to dwell upon. "Interaction with communities during the process has enhanced students' awareness of place and culture while designing and has provided sources of inspiration to address meaningful problems within communities" (Canizaro, 2012). Students, then address the important chronology of problem finding first, and then problem solving. Thus, problem finding requires contextualizing the problem, understanding its idiosyncrasies, its implications and worth, or as Hall (1970) positions it, "a process from which meaning derives."

2.4. URBAN LEVEL INTERVENTION SEEKS PARTICIPATORY APPROACHES

With globalization and increasing migration, cities are progressively becoming multi-cultural and this has manifested itself through the changing societal and physical environments. The presence of multiple diversities has questioned the approach taken in urban planning and urban design discourses so far. Urban level interventions are time and resource consuming exercises and are usually carried out by various professionals working in isolation from ground realities. This is clear when master plans, zonal development plans or even area level plans do not acknowledge the existence of the informal economy, which happens to be a large section of the society providing essential services or, when future visions do not consider unauthorized constructions in the city. The way planning has been carried out in the country thus far, has been a top-down approach, divorced from reality and practicality.

"It is seen that participatory planning approach is more focused on the execution of programmes and strategies, whereas plan preparation and other decisions related to the land and the built environment are kept distant from the people especially the urban poor" (Maiti & Faria, 2017). Even though formal requirements for public participation and public hearing exist, these find extremely limited space in the entire process and have been reduced to a compulsory formality to be done. Since 1970, participatory methods have encouraged people-involvement in advising, envisaging and conceptualizing in the early design stages. In recent times, the participatory movement has gained momentum and participatory approaches are being introduced in the architecture pedagogy, at the master's level, in the fields of urban planning or urban design, in many architectural institutes.

Most architects are finding themselves involved in projects and building types that addresses urban issues and concerns, and cater to a socially, culturally and economically heterogeneous population. The scale of architectural projects has also changed, and the profession of architecture necessitates a positive shift from being an 'elitist' or an exclusive profession to being more inclusive in nature. Architects are working on affordable housing, slum redevelopment, large townships which has a good mix of various income groups, public buildings of much larger footprints than seen earlier etc. to name a few. With change in type and scale of architectural projects, the need to change the mindset to approach these, is equally vital. The success of a participatory approach depends on the shift of the mindset of young architects, when they recognize that their role is not of a leader but that of a facilitator, that they are not subject experts, but process experts. When they understand this viewpoint, they are likely to act as a catalyst in the design process, unlike 'be in control' as our current architectural pedagogy teaches them to do. Participatory approaches demand that we redefine the relationship between the design professional and the stakeholders. Until and unless we bring the participatory approach in the design studios, our students will continue to be 'leaders' rather than 'enablers'.

3. METHODOLOGY

This paper argues that many of these concerns relating the conventional architectural studio model can be addressed by introducing participatory approaches in the design process at an academic level. This paper postulates that for effective community participation, participation should start in the architectural design studio. It focuses on Two major questions:

- In which ways can the concept of "participatory approach" be **applied** to the architecture design studio?
- In which ways does these concepts **affect** the architecture design projects within the design studio?

It also seeks to assess the challenges and opportunities brought about by this proposed pedagogical model and analyze its applicability to broader settings.

The findings in this study are based on studio design projects conducted simultaneously with students of different semesters (III and V) from the Bachelors of Architecture program at School of Architecture, Lingaya's Vidyapeeth, Faridabad. This study attempts to investigate and understand how participatory approaches can be applied in the architectural pedagogy, striving to learn its benefits,

issues and concerns. It also tries to evaluate the efficacy of the approach by employing qualitative (interviews) and quantitative (survey polls) methods with the students, faculty and external examiners (jury members) at the end of the semester. A total of 57 students (29 in Semester III and 28 in Semester V), 6 studio faculty and 6 jurors participated in the study.

3.1. APPLICATION OF PARTICIPATORY APPROACHES:

The participatory approach empowers the student to commiserate with the stakeholders/ end users through several interactions at different stages of the creative process. The idea is to imbibe in the students the understanding of the importance of the multi-faceted context in which design production takes place, right from the formative years of architectural education.

Participatory approaches can be understood and applied in the architecture design studio in three ways:

- Wherein People are seen as a RESOURCE
- Wherein People are seen as CO-CREATORS
- Wherein People are seen as PRIME CREATORS

3.1.1. PEOPLE AS A RESOURCE (Design *for* the user)

In this case, people as seen as an important resource which can help the students in decision-making. The studio is structured in a way that offers students' learning opportunities of incorporating and responding to users' requirements by directly involving, interacting and informing PEOPLE in the program formulation and design process, and validate that the solutions are aligned to their needs and preferences. The faculty is no longer the sole knowledge provider, and the stakeholders would don this hat as well. In this method, the usual conventional design studio model is followed with an added element of "Real People" or a "Real client". The objective is to achieve a user-centered design using reflective feedback from the stakeholders. This method of application seems to be the closest to professional reality.

3.1.2. PEOPLE AS CO-CREATORS (Design *with* the user)

In this case, people are viewed as co-creators and they have equal opportunities in decision-making. Students and stakeholders work together throughout the entire design process to create a solution together. This method seeks to achieve collaboration between the student and the stakeholder.

3.1.3. PEOPLE AS PRIME CREATORS (Design *by* the user)

In this case, people are empowered to create themselves. Stakeholders/ users are imparted the basics of design and provided access to tools and resources required for the design process as they frame their own problems and find their own solutions. This approach seemed pre-mature and inappropriate for the formative years of architectural education, and hence, is outside the scope of this paper.

The type of participatory approach to be adopted depends on the type of challenge or opportunity at hand. Table 1 presents an analysis of the three methods w.r.t the role of the students and stakeholders and the projects these can be applied to.

Table 1. Methods of Application of participatory approach in architectural design studio. (Source: Author)

Method of application of Participatory Approach	Stakeholder/ user Involvement	Role of student	Area of application
People as a Resource (Design *for* the user)	Moderate	Prime creator and facilitator	Wider applicability, in all types of architectural projects
People as Co-creators (Design *with* the user)	High	Collaborator and facilitator	Focused groups. Projects requiring expert/ specialist involvement.
People as Prime Creators (Design *by* the user)	Highest	Enabler	Smaller projects, with defined communities, specific contexts. E.g. Self-help projects

Understanding that a participatory approach method is time consuming vis a vis the conventional design studio and the design problem had to be completed within the stipulated time of a semester and as per the syllabus, the participatory approaches have been applied at only a certain stage of the design process. In one case, it is applied at Stage 1, while in another studio exercise, at Stage 2 & 3. Though the students were encouraged to meet the stakeholders' multiple times, as a part of the studio expectations, they had to consult the stakeholders at least TWICE before finalization of the given stages (Table 2). The emphasis was on the quality of the interactions, not the quantity.

In the first participatory approach experiment, students of semester III were required to design a community center for the residents of the old town of Kangra, Himachal Pradesh. Taking a step-by-step introduction to participatory approaches, the approach was to be applied at the Program formulation stage only, as it was felt that introducing participatory approach at the design production stage could

overwhelm the new learners, who are still learning to articulate their design thoughts. PEOPLE were seen as a RESOURCE in this case. The students were first asked to create a design brief and area program based on conventional design studio approach. After submitting the area program, the students (in groups of 4 to 5) were to undertake detailed study of the context on parameters like history, society and culture, occupation and income, physical and social infrastructure, vernacular methods of construction etc. They were then asked to consult the community, through interviews, their thoughts on what major functions would they want in their community center. They were instructed to ensure a good mix of respondents with respect to age, income groups and gender. Later, they were required to present and discuss their area programs with the community. The area programs created through conventional approach and the participatory approach were then compared and reflected upon.

Table 2. Involvement of stakeholder/ user in architectural design studio (Source: Author)

Involvement of stakeholders/ end users	Stage details	Purpose
Stage 1: Program Formulation	At least TWICE before finalizing the Area Program and Design Brief	For ascertaining user needs, preferences and aspirations
Stage 2: Concept Plan	Before finalizing conceptual decisions	For reflecting upon ideas generated by the student.
Stage 3: Design production	At least TWICE before arriving at the final design	For evaluating user experience.

In the second participatory approach experiment, students of semester V were to design a school at Faridabad. They were required to detail out the design of the pre-primary section, mainly pre-nursery and nursery classes. The participatory approach was to be implemented in all stages of the design process, and particularly, in the detailed design of the classrooms, wherein students were required to consult the stakeholders, in this case, the teachers, assistant teachers and the 'didi' (maids). PEOPLE were viewed as CO-CREATORS and were integral to the decision-making process.

4. RESULTS AND DISCUSSION

4.1. PARTICIPATORY APPROACH AT THE PROGRAM FORMULATION STAGE:

The study of the context prompted students to indulge in detail explorations of 'what and why's? The participatory approach highlighted the need, usage possibilities and expectations from a 'future' community center, but also touched upon the aspirations of the people of old Kangra. Students found that certain functions that seemed appropriate in the community center of a metro city like Delhi were irrelevant in this context (Table 3) and some new functions were stumbled upon after discussions with the community. For instance, many women in the area worked as maids in residences of middle-income groups nearby and therefore, wanted a creche in the community center. The area lacked green spaces and parks, so, children wished for a playground with play equipment's here. Certain functions were also crossed off from the area program which the residents found unnecessary and thought that there were more pressing issues to be addressed. For example, the restaurant or café was struck off from the area program as community members preferred a kitchen where they could collectively cook to celebrate festivals or small events. The library also did not find many takers. Instead, people voted for a computer room with Wi-Fi facilities.

4.2. PARTICIPATORY APPROACH AT THE DESIGN PRODUCTION STAGE:

The students consulted and collaborated with teachers of the pre-primary sections throughout the design production stage. Explorations into preferences of the kind of learning environment teachers preferred differed from the desire for nature in the classroom, smart learning environments, informal settings to promote group learning or learning through social interactions etc., discovery learning, amongst others. These preferences became the starting point of concept formulation for many students. Deliberations on physical models suggested that teachers preferred a flexible furniture arrangement as opposed to the clover tables or group discussion-oriented arrangements proposed by some students, since the classroom was used for different purposes and activities throughout the year. They also wished to have a small stage in the class where young children could be trained for public speaking. They discarded cartoons and such wall art as proposed by the student's initial designs to create a playful environment for the young learners and preferred pin-up boards for displaying the various activities they conducted throughout the year and to reinforce concepts of learning-by-seeing. The assistant teacher was keen to be provided with a small cubicle, off bound from the children, where all student notebooks, stationary etc. could be kept safe.

4.3. ANALYTICAL FINDINGS

The participatory approach in the architectural design studio was analyzed on the issues and concerns discussed in section 2 of this paper. The parameters of analysis were: Active learning opportunities, Confidence level of students, appreciation of context,

application of context literate solutions, students' feedback on experience of the participatory approach and impact on the overall quality of the design. The results are discussed below.

Table 3. Area Program for Community Centre at Kangra, Himachal Pradesh (Students work) (Source: Author)

Program as per conventional approach	Feedback	Comments/ Observations
Commercial shops	**N**	Maybe 1 or 2
Meeting Rooms/ Seminar halls	Y	Activity rooms
Training halls	Y	
Auditorium or Convention Hall	**N**	One covered flexible multipurpose space will suffice.
Exhibition Hall	**N**	Not required
Hotel	**N**	Some Guest rooms enough
Office	Y	
Restaurant and Cafe	**N**	Kitchen for community gatherings/ small functions.
Life Zone: Fitness Centre, Gym, Swimming Pool, Spa, Sauna/Steam room/Jacuzzi etc.	**N**	Found to be irrelevant in this context
Sports facilities: Badminton, Squash, Basketball, Lawn Tennis, Table Tennis, Card Room, etc.	Y	Also include indoor play space for children. Site area does not permit larger sporting facilities
Library	**N**	Computer room with Wi-Fi
Parking	Y	
		Nursery/ Creche
		Skill development

4.3.1. ACTIVE LEARNING

The studio faculty noted that the participation of non-active students had shown slight improvement post-participatory approach. The studio presentations were still led by the 'star performer', but the 'silent' ones had also started to contribute to discussions. This can be attributed to the fact that through a participatory process, the students get an opportunity to get evidence on an issue, debate potential decision options and reach at mutually approved upon decisions. This sharing of knowledge and experience with others is encouraging for the students, making them self-assured enough to speak up during studio presentations. Participatory approaches in the design studio have led to mutual learning: an increased awareness for both the student of architecture and the stakeholder. It was observed that when community members were empowered and when they felt that their opinions mattered, they opened to discussions and actively participated by suggesting alternatives to the designs of the students. This was especially true with the female population. This trickled down to the faculty as well. The studio faculty observed that sometimes, they witnessed issues that they were unaware of as well.

Finding out about aspirations and preferences is perhaps the toughest part of a participatory approach, but students learnt to ask the right kind of questions to steer the discussion wherein the stakeholder would talk about 'what they preferred' and not only of 'what they needed'.

4.3.2. CONFIDENCE:

The jury (external examiner) and studio faculty found that students were more confident in their proposed design solutions as their reasoning was no longer based only upon their interpretation of the problem and had the backing of the stakeholders. The students echoed the same. Since the participation stressed on including multiple types of end-users, students gained insights into varying perspectives, wherein different stakeholders focused on different priorities with respect to the functionality and aesthetics of the built form. For example, the teacher, the assistant teacher and the security or housekeeping staff provided more practical feedback regarding circulation, location of teacher's desk, type of material to be used etc.; the Principal of the school, the visitors (parents) and the owner provided feedback on aesthetics and overall environmental quality of the space. The students also highlighted that these discussions helped them develop their communication skills. They also found participatory consultation techniques engaging. Students feel that this helps their confidence and ultimately their creativity. They see this as a very positive part of the process. The average score out of 10 were 7.7 (students), 6.8 (faculty) and 7.2 (jury).

4.3.3. APPRECIATION OF CONTEXT:

Applying participatory approaches at the design study stage has resulted in a significant understanding of the context in which the design is being produced. The students became mindful that uses and amenities that a particular project may require, does not automatically apply to every other context, even though the building type may be the same. Each context has its specificities and only by considering

these variances can a 'future' building be best suited to its community. The students found the process enriching as it gave them insights to concerns which they had missed out in their pre-design study phases. This parameter received the highest average score of 8.6 out of 10 from the students. The studio faculty (7.9/10) and the jury (7.8/10) reverberated the same, by noticing these attitudinal changes in the design production.

4.3.4. CONTEXT LITERATE SOLUTIONS:

It was interesting to note that the appreciation of context did not necessarily mean the production of context literate solutions. This came to the fore, more strongly in the third semester design studio of community center at Old Kangra. Having created an area program with the aid of the community members ensured that most needs were incorporated and the students had a better understanding of the community, their condition, desires, expectations and more, however, some students did come up with extravagant designs and globally influenced forms which were seemingly context ignorant, plummeting the average score to 6.1 out of 10 as given by the faculty. This however, was controlled in case of the school project where participatory approaches were applied at the design production stage as well. The designs were more realistic and closer to user needs and preferences. This suggests and highlights the need of participatory approach throughout the design process for a context specific end product.

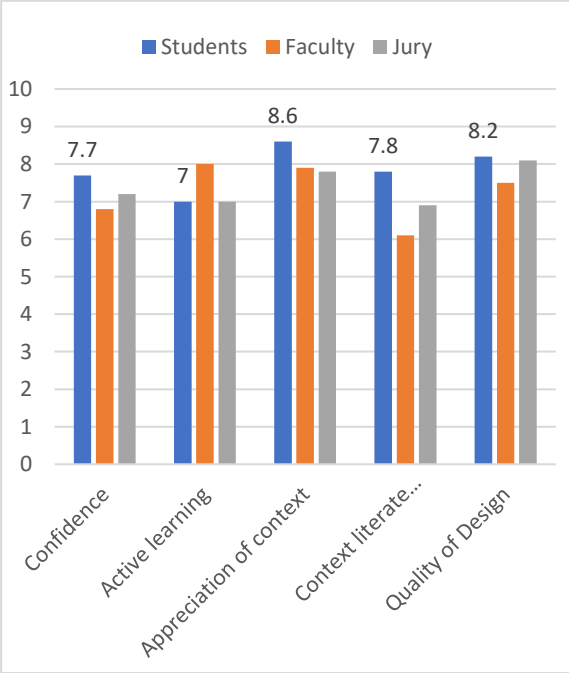

Fig. 1. Analytical findings of introducing participatory approaches in architecture design studio on different parameters of students' confidence, active learning opportunities, appreciation of context and context literate solutions and impact on overall design quality. (Source: Author)

4.3.5. QUALITY OF DESIGN:

The faculty (average score of 7.5/10) found that the students were able to produce improved concepts for their architectural designs post-participatory methods. The cues/feedback provided by stakeholders during discussions encouraged the students to research deeper into those issues and find specific solutions. The design quality had therefore, improved in many cases. The examiners (average score: 8.1/10) also noted that the designs in most cases were close to ground realities.

Even though teachers have always encouraged students to make study models early on, at the concept development stage, as a tool for generating better design concepts, this seldom occurred. Physical models were made only for the final jury presentation. However, with the participatory approach, students had to use physical models even at the creation phase of conceptual design. The use of flexible working models benefitted both the students and the stakeholders in grasping spatial conditions of the proposal and exploring design possibilities and students noted that this helped them design better.

4.3.6. CHANGING ROLE OF FACULTY:

Collaborative learning processes require a revision of power relations in the architectural design studio. The studio faculty is no longer the figure of authority, the sole knowledge provider as the students receives immense knowledge and feedback from the stakeholders and the end-users directly. Subsequently, the faculty has to don the role of a mentor and a consultant.

The faculty needs to address the Pragmatist approach (Give them what they want) and inculcate in the students that they need to be "facilitators", not "pragmatists". Unlike the pragmatist approach which aims at providing for the stakeholder's vision, the facilitator approach values both, the architect and the stakeholders' vision, and takes the design process forward. For example, when stakeholders were not very keen to have a library in their community center at Kangra, the faculty asked the students if they felt a library is needed in a community center and to highlight why. They encouraged students to explain why a library should not be removed in its entirety from the program, and that it can exist in docile forms instead of a full-fledged library room.

4.4. CHALLENGES ENCOUNTERED DURING IMPLEMENTING PARTICIPATORY APPROACHES IN DESIGN STUDIOS:

Pretty early in the participatory mechanism, the students realized that their usual modes of presentation were difficult for common people to understand. So, before every meeting, they had to have a flexible 3D model ready for discussion. This did increase the pressure on the students. It was still manageable since only parts of the design were taken up for participatory discussions. However, if the entire project is to be participatory in nature, it would require longer

timelines than a typical 10–12-week studio exercise. The faculty noted that the students kept asking for deadline extensions.

The participatory approach model is logistically quite complex: in particular, setting them up and briefing the stakeholders. It entails significant amount of investment in terms of time and effort.

Not every time did the students encounter people ready to give time for these student discussions. While some were enthusiastic about participating, others felt it was a waste of time as this was an academic exercise and would not result into anything concrete.

It was also seen that occasionally a student tried to defend a seemingly irrational design solution citing the stakeholder's demand.

The participatory approach also revealed that architects need to understand ways of communicating better with non-architectural audiences. The binary of using architectural vocabulary during studio presentations and not using the architectural jargon at the stakeholder meetings was both challenging and interesting for the students.

To have holistic feedback, all stakeholders should be included. However, many times, some stakeholders stayed quite during discussions due to the presence of higher authorities. For example, the assistant teachers were hesitant to speak up in the presence of the Principal of the school; so, did the housekeeping staff. So, for effective and wholesome feedback, it is required to discuss the design with each stakeholder category separately. This can be a time-consuming process.

5. CONCLUSION

Architecture pedagogy should comprise of a good mix of realistic and imaginative studio projects, enabling proper outlets for creative and realistic explorations. Participatory approaches in the design studio have proved to be a good method of bringing architecture pedagogy closer to reality and can be introduced in various forms and at various levels as deemed necessary, depending on the vision, objectives and philosophy of the architecture school.

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APPENDIX 1

Interview Questionnaire for faculty

1. Has there been a marked improvement in the understanding of user needs for the specified project?
2. Were the students able to formulate better concepts post-participatory approach?
3. Were the students more confident in presenting their work post-participatory approach?
4. Were the students able to complete/ submit their work on scheduled time?
5. Were the students enthusiastic about the new approach?
6. Were you enthusiastic about implementing a different approach in the design studio?
7. Was there a visible change in the participation of non-active students during studio discussions?
8. Did the new approach meet your expectations?
9. How was your experience with the participatory approach?
10. Please list 2 limitations/ challenges of this approach?
11. Please rate the students on a scale of 1-10 (with 1 being the least and 10 being the topmost score):
    a. Understanding of the context
    b. Producing context-literate solutions.
    c. Confidence
    d. Contribution to discussions
    e. Overall Quality of design
12. Any other observation/ comment.

Interview Questionnaire for external examiners/ Jury

1. Do you see a difference in the quality of work presented using a participatory approach vis a vis traditional method?
2. Would you say their designs were more realistic, or there wasn't any perceivable difference in the final product w.r.t the kind of student work you have been seeing as an examiner?
3. Were the students able to answer your queries satisfactorily?
4. Please rate the students on a scale of 1-10 (with 1 being the least and 10 being the topmost score):
    a. Understanding of the context
    b. Producing context-literate solutions.
    c. Confidence
    d. Contribution to discussions
    e. Overall Quality of design
5. Any other observation/ comment

Questionnaire to be filled by the students

(To be filled anonymously)

1. Have you tried co-creation before?
2. How was the experience of a participatory approach to design vs the traditional design studio?
3. What was the most satisfying part of the participatory approach?
4. What was the worst part of the participatory approach?
5. Did the approach help bring in new insights that you may have missed out in your pre-design stage studies?
6. Did the participatory approach require additional time inputs vis a vis traditional method?
7. Were people (stakeholders) enthusiastic about being a part of the design process?
8. Would you prefer a participatory approach in design studios in the future semesters?
9. Please list 2 limitations/ challenges of this approach?
10. Please rate the activity on a scale of 1-10 (1 being the least and 10 being the topmost score)
    a. Enjoyable
    b. Informative
    c. Engaging
    d. Burdensome
    e. Wasted effort
11. On a scale of 1-10 (1 being the least and 10 being the topmost score), how well did this approach help you in gaining insights on the following:
    a. Functional needs of users
    b. Psychological needs of users
    c. Aesthetic needs of users
12. Would you use this approach as a tool for future design projects?
13. Any other observations/ comments