SELF-CONSTRUCTIVE LEARNING IN PRELIMINARY DESIGN STUDIO

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In the vast framework of discussions on design studio pedagogy, this paper focuses on the relationship between the extent of the first-semester architectural design course and the level of individual and social skills developed during it. The course instructors acknowledge that beginning from the first semester, architecture students should be engaged with global and local socio-cultural issues, technologies and novelties. The studio shouldn’t be a mere imagination laboratory. Conversely, it should be an active social network of environmental awareness using creativity intellectually. In order to do so, a semi-designed first-semester design studio curriculum is developed to be discovered both by the students and the instructors. The responsive agenda helped modifying conditions effectively, according to the feedbacks from the actors of the studio. Learners were led to engage in action and interaction during and outside studio hours so that they can enhance and share their capacities and skills. Students’ social behaviors and physical works notably showed: learners without a high-level skill of understanding given technical knowledge showed lower interest in self-constructing knowledge on other related techniques; self-motivated learners value their own criticisms and creativity, so that they represent themselves and their work more clear and confident, and take criticisms well. A minority of learners showing good technical skills couldn’t self-construct knowledge, or couldn’t present their knowledge well. The results of this pedagogical approach especially underlined that mere knowledge is not enough for a creative mind, developing and facing design problems. The operation of the course resulted in a discussion that, we may need to act towards novice learners of architecture discipline not differently than the latter ones in the context of conceptualization and content of design problems, whilst nurturing them as critical and confident individuals. However, the process showed that, in order to amend a learning-centered pedagogy, particular positions should be explored further to encourage students to self-construct knowledge, research and explore multi-layered thinking patterns. The discussion aims to demonstrate the gains and difficulties of constructive pedagogical approaches in preliminary architectural design education.

Keywords: Preliminary architectural design studio, Constructivist pedagogy, Social skills.
Introduction

Ever since architecture profession has been taught in higher education institutions, from the early years of master-apprentice relationship model until contemporary modes of studio organizations, communication in the form of criticism has been the fundamental pedagogic method. The shifting paradigms in the world culture led to changes in architecture's definition and aim, accordingly in architectural education, too. Considering 1980’s as an important threshold, the role of an architect has been transformed from being the designer on paper into the actual communicator-maker. Accordingly, institutions' main teaching aim also changed. The aim defined now, in any area, as creating novelist and critical intellectuals. In our new world, the disciplines are interrelated and being just a professional of one discipline is not enough. Following the concept of creating a life-long learner, educators need to nurture self-motivated, curious, concerned, and interrogating individuals.

As stated above, university students, especially of a discipline like architecture, which is intertwined with every aspect of space and time, culture, and society, must be nurtured to become concerned individuals, not merely to develop a career. In this context, to examine the changing role of the design studio instructor of the 21st century, a variety of educators have asked several questions like, “What should contemporary design studio teach? Do we have to teach anything? In what kind of ways can instructors enhance creativity?” Even in a preliminary course of architectural design, students must practice three basic works; (i) learning and practicing a number of new skills, such as visualization and representation, (ii) learning a new language, (iii) learning to think architecturally, as summarized by Ledewitz (1985). To gain these skills at once and find and present the relations between them meaningfully is not the idea of 'basic' for many students. The topics and mediums and ways of practice of architecture education are unfamiliar to most of the students, maybe to all. Moreover, students must take action during these educative processes, trying to gain skills synching their mind, soul, and body to success. Here, establishing a respectful and supportive environment for dialog and self-presentation becomes the initial act of the studio instructors. This kind of environment will help the learners to blur the limits in their minds to act more liberal and creative, while interaction allows them to open up their borders both individual and social. This desired process is referred in this paper as “self-actualization” (Hooks, 1994) and “self-regulation” (Robert and Simons, 1993), which are the key actions for becoming “self-constructive” learners. Every learning process is followed by another discovery of information, which throughout criticism results in innovation. Imagination added to this innovative process leads to creative solutions, which is the core of design. In short, it is a series of individual activities. However, individual here should't be understood as self-centered. The whole spiral of learning and producing mentioned above is an extrovert activity, with a deep focus on own mind and body.

Hereby it is concluded that design-oriented teaching is dualistic, i.e. the effects of students' individual perceptions and interpretations on the knowledge exchange are inevitable. The frequently used term student-centered education does not come to reality so easy in mass-education. It is suggested in this paper that preferring the term learning-centered education instead suits better to the concept of life-long learning approach. However, the nature of design teaching requires one-to-one contact with every student regardless of the class population. So, it is both student- and learning-centered. Every other student adds a perspective to the common learning process. Differences are seen as richness, multiple ideas are valuable, and there is no dominant culture. Creativity is handled as a skill that can be developed through the studio communication and activities.

Creativity and multiplicity (in manners of representation techniques, social and cultural qualities, gender, etc.) in the studio culture has been covered with various contexts in the literature. There is a considerable amount of books, research papers, meetings, and reports covering aims and recommendations for design education curriculums or design knowledge and cognition-behavior related studies. Among these, most of them observe the design studio structure as a key element. This research suits in this framework concerned about the effects of constructive pedagogical approach in the first semester. The research question “Does self-constructive learning approach boost skillful activities in the preliminary design studio?” seeks to evaluate the design thinking and making processes of novice
students. Not a quantitative analysis but a qualitative phenomenological approach is adopted by the researchers. The initial focus is on the improvement of the student throughout the process socially and individually, in relation to the extent and organization of the course. Bringing the course curriculum forward also aims to develop criticisms on first-year architectural design education.

Self-Constructive Learning in the Studio

Before discussing our pedagogical approach to the preliminary design studio, it is helpful to review the essentials of the pedagogic models that influenced our methods.

Traditional 20th century didactic educational systems include almost no place for research and criticism. In the education of architecture as a creative thinking and making discipline, it has been almost the same way. Criticisms were there, but the only critics were the studio masters, and research was there but only on the current theories of architecture and around the style of the master. No multi-disciplinary and multi-way creative thinking, let alone making were in the question for learners.

Yet, the final of any learning process, understanding, in means of comprehension, requires critical thinking. Griggs and other researchers concluded after a wide literature review that critical thinking processes require abilities such as open-mindedness, tolerance of ambiguity, and a skeptical attitude (Griggs et al., 1998). Whilst trying to gain these skills, engagement with self and environmental concepts occur through critical thinking, and vice versa. In addition, creating simultaneously with questioning and presenting ideas, and sharing these will lead to non-didactic, fruitful learning environments. Both the individual identities and collaborative studio culture are celebrated. In short, dialog and interaction are the core concepts of a creative studio organization.

The next two chapters, constructivist education theories and their effects on design studio is introduced. In order to analyze this approach of learning, incorporating concepts such as criticism, creativity, understanding/ deep-learning, life-long learning, self-actualization, and self-representation are superposed on the surface of preliminary design studio curriculum.

Constructivist Pedagogy and Self-Constructive Learning

From the early years of the 20th century on, constructivist theories concerning child psychology and education arose against the traditional models. In the second part of the century, these theories begin to be adapted to higher education teaching models. Even if these models still don’t dominate the educational domain, they are accepted as the ideal general framework of liberatory intellectual education practices. Fundamentally, constructivist pedagogic models refer to a process of individual and social learning, being in the process with the mind and the body, so that discovery and experience intertwine -an active knowledge structuring (Dewey, 1897, “Experience and Education”; Bruner, 1967, “Discovery Learning”; Vygotsky, 1978, “Social Development Theory”; Kolb and Fry, 1975 and Kolb, 1984 “Experiential Learning”; Maturana and Varela, 1987, “Autopoiesis”). The realm of knowledge is not limited and there is not one predetermined way of reaching and transferring information, as in the positivist scientific approaches. The ways of constructing knowledge of one's own depend on the cognitive and metacognitive processes. This process is not a linear way but more likely an irregularly circular strip, affected by the internal and external stimulants. In short, the network of information is multidimensional and multilayered, like the process of learning and knowing itself.

By predisposing to the skills needed for it, the essence of constructivist pedagogy supports the sustainable idea of life-long learning, by which each individual pursuits knowledge for professional and non-professional motives. But the idea of self-constructing knowledge in a learner-centered pedagogy is commonly misunderstood, as if the educators do not say anything directly to the learners, or criticize any of them. In comparison to the traditional giving lecture class, the role of the educators is much more critical and active in the constructivist learning class. Fundamentally, constructivist pedagogy
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acknowledges the uniqueness of every learner, and that no mind is a blank board to be filled from scratch. Learners' former experiences and socio-cultural values are effective in their learning process, regardless the teaching model. Literature allows us to verify that within a constructive network society, exchange of knowledge is not transfers of direct and absolute knowledge. All the receivers, including the instructor as another learner, process the realm of knowledge as new information in their own minds. This cognition of dynamic “meaning-making processes” (Piaget, 1954; Bruner, 1986, 1991; Cook-Gumperz, 1986; von Glasersfeld, 1989) includes the internalization and reflection, followed by the understanding. In this manner, learners construct knowledge through a dialectic process with their social environment (Vygotsky, 1978; Wenger, 1999), and within themselves. Ritter (1966), in his influential book Educreation, emphasizes that learning together is a series of skills, unknown in many ways, needed to be worked on hard.

Whilst the multiplicity of the learner identities because of the mainstream national education systems, learning styles almost never change. It has been the linear teaching model; the teacher teaches from one point of view, no matter how diverse the minds, the perceptions of the learners. There is no circular inquiry or brainstorming, only questions on the specific topic are allowed to learn deeper. Although the discussion on the adoption of constructivist education theories began many years ago, only towards the end 20th century, a minority of educators or institutes recognized that it would be wiser to make use of the richness and eliminate the barrenness. Thinking and acting in multiple ways allows both the teachers and the students get a deeper understanding and accordingly deeper learning. Biggs (1989) claims that processes which conclude with surface learning involve heavy workloads and strict assessment methods, letting short or no time to reflection and criticism. These lead to a lack of interest and demotivation for students. In addition, high level of time spent with the teacher is another reason for surface learning which also promotes lower independency and self-presentation abilities in students. Persaud (2007) points out that, students need to appraise their own ideas objectively, and grasp how they will be perceived by others. The learner must be curious, open, and confident so that a loop of researching, designing and representing is triggered. The outcomes within this loop lead to pursuing informed more and this opens up new understandings leading to new curiosities. This ongoing cycle of experiences makes the student a willing life-long learner. As Sennett (1992) puts it, the essence of developing as a human being is developing the capacity of coming through more complex experiences.

Robert and Simons (1993) designated that giving the opportunity to regulate their own actions increased students’ performances in most cases. But certainly, there are some major challenges facing the students during these processes of self-actualization and self-regulation.

Being adaptive to learning style changes or knowing how to learn most likely didn’t come up as a skillset in their former education. Beginning higher education with preconceptions, and unwillingness or fear to change these schemata is highly common. In some cases, learners themselves do not know the reasons for putting up resistance to novelty. Additionally, Vermunt and Verloop (1999) found out that, instructional approaches do not directly influence students' learning approaches either. Robert and Simons (1993) give examples of students taking responsibility on their own but not with a group. However, “Constructive friction between teaching and learning is often necessary to make students change and to develop their learning strategies” (Vermunt and Verloop, 1999:201).

Inevitably, students who generate the majority of this kind of constructive learning environment have many responsibilities. On the other hand, students’ responsible acts begin with educators’ position as the guide with suitable support, at the right level and at the right time. This position is referred as “coach” in the related literature. Presenting learning as research and inquiry primarily requires coaching the learners to find the ways and tools leading to deep learning. With Hooks’s (1994) view of liberating and fun education, it can be suggested that the coach is able to create a non-traditional learning environment that is intellectual and exciting at the same time if the students are aware of and interested in the existence of others and things around them. Students coming from a traditional education system will be interested only in the existence of the educator. In this context, Hooks (1994) explains that self-actualization is the key for both the educators and the students. The educator’s first assignment is irrelevant from a course content or knowledge: The students must be told that they are all unique individuals and must be aware of
their minds and bodies in the social organization they are a part of. This way, students’ capacity to create or develop self-regulation and self-respect is presented. After this introduction, students’ assignment is enriching this capacity during the learning process.

Reflections of Constructivist Pedagogical Approaches in the Preliminary Design Studio

Design studio teaches critical thinking and creates an environment where students are taught to question all things in order to create better designs. (Koch and others, 2002)

In addition to the radical socio-cultural transformations in world history during the second part of the 20th century, in the light of the new educational perspectives introduced above, design teaching experienced paradigm shifts as well. When it comes to the 21st century, along with many academics, dissident architecture students were aware of the impractical, limiting and in some cases even hostile environments of traditional master-apprentice studio instruction and jury systems. As a notable outcome, “Studio Culture Task Force” by AIAS is published in 2002, which two years later entered the NAAB accreditation conditions under the topic of “learning culture”. Fundamentally, “studio culture” is a term containing the educational aims and socio-cultural rules of studio organization, working as a guide for its actors. In the scope of learning outcomes, put as “understanding” and “ability” in NAAB terms, the common discussion ground of accredited architecture schools’ studio culture policies can be summarized as informality and multiplicity; creativity and criticism; respectful communication and interaction; collaboration instead of competition; time management. So, both self-regulative and independent personal growth, and social skills development are emphasized, like the constructivist educational models.

As Ruedi (1996) suggests, design serves as a mediator between mental activity and social activity. Even when communicating verbally on one’s work with each and every person is impossible in a big studio, making all students work visible is an efficient way of interaction. Individual or group works presented in or out of the studio area, activities like field trips, workshops and seminars, open various ways of communication among peers, educators, faculty managers, professionals and public. This dynamism of design being both “graphic and verbal activity” (Schön, 1984), brings a dynamic sharing environment forth. Interaction and continuity are concepts that Dewey (1938) underlines frequently, which should be adapted to the preferred contemporary design education. The “reflection in action” theory of Schön (1984) followed the pioneer constructivist educator Dewey’s theory of non-linear active thinking cycle. This theory dominated architectural education discussions in the western world in the end of 20th century, and it is based on the idea of communication and criticism. Kolb (1984) developed this idea of reflective action into “experiential learning cycle”. Cowan (1998) further matured this concept to a cycle of “reflection for, in and on action”. During these reflective cycles causing new perspectives will be enabled only if the learners gain the skill to evaluate and interpret new information with their own senses, ideas and behavior. In short, gaining the skills leading to deep understanding is experienced through continuous critical thinking.

“Studio culture” as put in NAAB reports, is an environment that is student-centered by nature. However, there are several types of research proclaiming that in reality, the studio is still mainly experienced as tutor-centered (Dutton, 1991; Ochsner, 2000; Deamer, 2005; Yanar, 2006). Most of the students demand information and methods from the tutors like in their early education, and, at best, adapt their perceptions around those. As Sachs (1999) underlines with her research, few students can fully complete the studio requirements without encountering difficulties and dilemmas. On the other hand, Allen (1990) argues that 1970-80’s “unnecessary instructional support” approach can interfere with the skills and abilities of successful learners.

Ultimately, we seek the learner-based pedagogic model, even if it is challenging to achieve some or all of its goals always. The main aim here is to begin nurturing creative intellectuals even if they don’t realize it. Thus, next chapters handle our preliminary design studio organization and the activities and positions the students took around it.
Preliminary Architectural Design Studio

Inferred from mentioned researches and individual experiences; the learning / teaching methods has to be arranged with various concepts and actions to support the learner to become aware of his/her own thinking processes, in other terms to gain metacognitive skills. To help each individual learner to gain a knowledge of strategies and to use these strategies for different tasks, these arrangements are not strictly defined but flexible and responsive in relation to the unique feedbacks of the learners, thus they can change, multiply and simplified throughout the period of study. It is agreed that flexible agendas and spontaneous shifts are utilized to promote excitement, curiosity, and dynamism in the learning environment. The course, which is focused in this paper, was pre-arranged being aware of the studio factors like learner profile, population, studio, and campus environment and their opportunities, which affects the teaching methods and contents directly. The individual and common experiences of the instructors from the past design studios were also discussed in these arrangements to develop new strategies in the sense of a creating a self-constructive design studio environment.

The main idea was to form a course content with the approach of deep understanding, where learners would discover basics of the design studio and also gain the knowledge needed to develop their own set of skills. Although it may seem to cover lots of topics in one, these topics were complementary and created a non-linear learning cycle. The learner should go back and forth when needed, thus, he/she will gain a deep understanding of by revisiting each topic in different contexts. As a result, this will promote self-learning and less dependency from the tutor, while the tutor becomes less involved in the process and tries to act as a coach.

Studio Environment

The first objective of the course is to establish a liberating, respectful, and a non-traditional environment, where the freshmen encounter totally a different situation from their past educational experiences in terms of interaction, methods, and covered topics. From the strict order of the classroom, a chaotic physical environment with no specific teacher’s desk, is arranged to stimulate a rich dialogue, collaboration and cooperation between learners. Every student is allowed to create their own working space within the limits of the studio’s physical realities. This allows the students to get the idea that something is different from their former class environment both physically and mentally.

The difference of the physicality should be used in advantage to hint the learner about the core concept of the studio. In their former education, each student has defined a role as an individual learner from a didactic model where a teacher was giving his/her unrivaled knowledge from a position where he/she can command all of the students and this affected their physical environment. In the very beginning of the course, with the help of this change of environment, it is possible to diminish the role of the tutor from the perspective of the learner and explain that self-construction of knowledge is the core idea of the studio, and describe the tutor and learners as equal participants in the studio environment, in order to minimize the need for dependency but to promote interaction, to introduce the liberating environment of the studio and to express the importance of research in the whole course. Now the learners have introduced a totally new environment both physically and mentally, different from their past educational experiences, in terms of interaction, methods, and covered topics.

Studio Actors

Our studio environment consists of three kinds of actors: The main tutors, courtesy tutors, and learners. While tutors and learners are not separated by experience and positioned as equal participants of the studio, tutors coach the learners to help overcome the tough situations with minimum interference. In other terms, the studio environment depends not on the knowledge of the tutor but the acts of him/her.
The tutor has to maintain dialogue and interaction between him/her and the learners and also between learners. An open-minded tutor who gives confidence to a student and giving right critiques is one of the essences of the studio. The tutor knows that there is no teaching process but a learning or if we take it further a discovery process achieved together with each individual learners. With this in mind, the tutor must acknowledge the multiplicity in the studio and deal with every unique learner. Although it is hard to achieve such a versatile dialogue method in a crowded group; being responsive and flexible with the methods, the tutor can overcome this situation maintaining a non-traditional environment, as students also feel responsible and confident to maintain the same environment without being disrupted.

Besides the main tutors, a variety of courtesy tutors are invited to keep the learners to get multi-faceted and multi-layered critics from different perspectives. It gets the dialogues around the work and between the actors richer. This is an important aspect for most of the design studios as these respectful dialogues are essential to try and achieve genuine solutions to a certain problem. By not communicating didactically with a teacher but discussing with a group of tutors and peers is more motivating to research further as it still allows the learner to develop his/her own solutions, thus self-learning occurs. In short, tutors’ role is to encourage creativity and self-criticism of a learner with a respectful communication method to achieve self-constructive design studio.

In the studio environment, the biggest group of actors, of course, are the students. During the course, tutors make it clear that students must recognize they are fully responsible for their position on the studio environment and they have to maintain it in order to construct self-knowledge. In a different environment than their former education experiences, collaboration and cooperation are promoted because while forming their understanding of design thinking and making, connecting all their experiences and strategies together with peers and tutors leads to a deeper understanding. So one of the essential issues of our studio is to maintain a constant discussion between learners, not only to develop an understanding of one solution to a specific problem but also to gain metacognitive skills to develop an understanding of their own strategies and to find creative solutions to other problems. Many students can find this self-constructive process difficult to adapt and this is why it is also important to maintain constant dialogue to maintain collaboration. This is not a simple task to get successful responses from the learners. In this situation, tutors have to be respectful and supportive but sometimes create conflicts to make students change and develop new learning strategies. In the end, every student is expected to make self-criticism and self-inquiry to understand own (as individual and group) learning and understanding process and contribute to the discussion within the studio.

Studio Actions

This course, course being a combination of former courses “introduction to architecture” and “presentation techniques”, transcend these titles, in terms of content and concept. The latter, as covering only technical drawing methods, didn’t had any critical or social aspects of design and introduced totally unrelated to the first term design education. The primer one, as a traditional 1st-semester course, its curriculum aimed to teach the basics of design, through introducing pioneer, well-known rules, and creative products of design, like Modulor, maybe copy some projects in actual models, preparing presentations about these, etc. Mostly operating through a conventional knowledge transmission, as an informative course, and home works to strengthen the understanding of these issues. In order to change this course from a didactic one to a constructive one, the new combined courses curriculum is designed to deal with ambiguous statements and unknown problems with possible unpredictable solutions. This will cause the actors of the studio to act in a common ground dealing with an unknown area of knowledge to them, thus they will bring out a new set of knowledge in the studio. To achieve that, actors must come up with creative solutions which need critical thinking in the process. To enhance this process, course's framework is designed as a series of small-scale projects implicitly related with architecture and a four-week main final project, with variations of these projects given as home works to stimulate the deeper
Understanding. Besides this framework, students were given repetitive informal self-learning tasks. In short, the course can be explained in two parts; informal tasks and studio works.

The informal self-learning tasks consist of three parts; mapping of the city, research, exhibition visits. The objective of the first task was to promote the learners to engage with the city and the built environment, to become aware of the place they live and learn to represent this knowledge with their own set of tools. Awareness is the main issue because it is the first step to critical thinking. Awareness leads to questioning or critical thinking and followed up by own creative answers. With this task, spread through the whole semester, the learner will observe, criticize, understand his/her own evolution with the supplement of the studio and other works. While considered a novice architect, the students are not novice thinkers. So the idea of the research task is to research two buildings and to write a critical opinion about these buildings. The objective of this task is to keep critical thinking as an ongoing process while engaging with the architectural scene in the world. The last one, exhibition visits are connected with the mapping task. The idea is to stimulate the students to interact with the city, especially experiencing places exhibiting different fields of creative professions or engagements and to analyze and understand the process behind the creativity they come across. The task also consists of documenting the exhibitions with different media like selfies, sketches, photography, models, etc. The task provided the students to visit places as groups and form a social relationship between them that affected studio in a positive manner. As a whole, these informal tasks were a positive distraction for the students to keep them engaged with tangible subjects while studio work deals with more abstract issues.

Studio work is arranged with small, short-term projects which last almost in the same day to stimulate simple genuine solutions with creative thinking, with a four-week final project. As a part of a 14-week process, each of the small projects is complementary and become the foundation for the final project. The topics of the short-term projects are introduced in ambiguity to the students which is preferred because, although the topics covered with these projects are basics of design education, students are total strangers to this field and with ambiguous statements they have to give more time to think and to come up with a solution.

The tutors’ explanations and support are really sensitive in this period because the students can be affected in an unwanted manner and try to satisfy the tutor and fail to get into deeper understanding of the topic. But the idea is, to leave the students in an unknown field with undetermined results and allow them to gain the tacit knowledge in the project without knowing. Being complementary projects, the student will utilize the tacit knowledge while dealing with the further projects. In short, the studio work is arranged in a flexible manner without hinting its relation to architectural concepts which are waiting to be discovered by the students in the process. Therefore, the student, which is considered as a learner have the option to evolve into a discoverer.

The topics covered in the course are pattern, scale, rhythm, proportion, fold, structure, human scale, vertical, text interpretation and utopia. Every topic introduces a new medium and/or material and represented by both a model and drawings but most importantly contains a tacit knowledge about basics of architecture, which the student uses later on another task. For example, structure topic was delivered by this statement; using straw pipes, students were asked to build a “thing as high as possible” with efficient material usage. The task introduced basics of statics and strength of materials and tacit knowledge about architectonics. While students were building their structures, tutors were explaining some facts about their work without interfering with their creativity.

Another example is the final project, which is a bit unorthodox case for the freshmen architecture students. The students were asked to create their own utopias and to represent this utopia with their own set of tools. The task is designed to be a complex one because the objective is to write a scenario in detail about their utopias, covering issues like economics, politics, technological development etc. The students were asked to do their designs after this scenario development so that they can relate content with the context. Every topic covered in small exercises were to be revisited by the students to fulfill their final project. In addition to that, tacit knowledge about the topics like user-design relations, community, neighborhood organization, politics of architecture, social responsibilities and etc. were covered in this task. Also, the mapping and exploration of the city task had come into use for this project because the
main idea is to become aware of the issues, criticize them and create an alternative. Again the students used the knowledge they constructed from their previous works and were fully confident to fulfill this kind of complex task.

Scenarios created by the students mostly based on contemporary criticism, like global warming or effects of global terrorism and war. Designing architectural solutions for these complex problems were not easy to find for freshmen architecture students, so the tutors allowed them to think “one foot on the ground and one foot off the sky”. This was explained to the students, that they have to abide by their first problem, offer spatial designs represented in an accurate context and with realistic content but the designs do not have to be familiar patterns. Most of the students modified the aim to design a near future, at a time the problems occurred and its end results can be observed. Thinking about the future motivated the students to think more innovative. Also, to inject confidence to students, tutors show a motivating attitude throughout the process. Tutors declared repetitively that architectural solutions have no right or wrong outcome, because of the multiplicity in the profession. Assessment will not focus on the aesthetic result of their project or perfection of their presentation but will focus on their ideas, coherency of these ideas, arguments about their utopias.

Evaluations and desk-crits were done in a softer jury sessions or in other terms like discussions sessions, which allowed students to have a freedom to form their ideas but also to gather up these ideas to a maturity that they can be presented to someone else. Both the tutors and students were learners and critics in this environment because the task was also a new field of knowledge for the tutors. The first two weeks were held as short group session and then studio work. Tutors didn't call out any names or rules on criticism, only always being respectful is underlined. Students, who are designated as self-confident in this paper, were showing interest in others works, coming along to listen to instructors' criticisms and criticizing their peers to empower their designs. This dynamic, free environment is used to overcome the pressure and to create a synergy within the limits of the studio. The students were informed to exploit this environment by establishing their own dialogue and interaction. The visual representations were declared as “not enough” because they also have to be an active participant in the studio. So that they can share with peers and they were not limited to think of their own projects, it is observed that they form small collaborative groups where peers helped and criticized others projects and get a deeper understanding of different contexts.

In conclusion, final project aimed to create a loop of the whole semester, as a wrap up of whole semester in terms of revisiting the knowledge constructed and get a deeper understanding. The implicit information hidden in the short tasks turned into an explicit set of knowledge, tools, and strategies by implementing them to another project. In the process, the learner, with as little guidance as possible, evolved into a confident discoverer.

**Conclusion and Discussion**

While designing the architectural curriculum, the main idea is that to give students problems that evolve from basic to more complex ones, or to start with small scale design then introduce the student to deal with bigger scale problems as they gain experience and develop the competence to deal with complex problems. This makes sense if you categorize the students as novice or experienced. In our studio, we ignored this categorization and approached the students as discoverers. By this approach, the assessment of the products of the students becomes more important than the complexity of a problem. In the end of the studio, most of the results have excelled to a level of third term projects in terms of critical thinking and creative thinking, which are designed thoroughly dealing with the urban scale and complex spatial organizations. So it is possible to say that, the traditional design studio scheme in the whole curriculum, which gets more complex at each term and requires some level of experience, does not have to be a strict scheme to be followed.

In contrast to achieve a finished product, the process of the design studio and design thinking is emphasized. This helps the tutor to maintain his/her role as a coach and not judge the student in his/her
own appeal. By eliminating the expectation of a finished product, the process is also enriched with other concepts and discussions in the architectural discipline. It is important to create a more critical environment from the beginning of the design education. Therefore, we implemented social responsibility notion in the core of the final project to introduce this sense and to discuss the architectural profession in a social perspective. These discussions do not require a former experience but skills to research, construct knowledge by the learners. It is normal to miss technicalities but the students who adopted the learn-design by research approach created their own knowledge realms and proved to be successful.

On the other hand, the learners who could not engage with their socio-cultural environments, could not respond to the expectations of the studio and keep on a low level of self-confidence and self-representation. Researching and understanding, in other words, the capacity of curiosity and awareness of learners about the discipline is substantially related to how interested they are with the world. Existence of awareness and curiosity is essential to the studio and without their existence students come across a difficult barrier to achieving what is expected. In this case, it is observed that creativity is lost, dialogue becomes non-productive and the level of satisfaction drops. Because of this, the tutor has to introduce informal and ambiguous tasks to stimulate the students’ relation with their world. Also, the tutor has to alter the expectations and assess the outcomes based on each unique cases.

In conclusion, the studio can be expressed as a journey of discovery, in which the tutors and students develop a new realm of knowledge in every task they deal. Development and self-construction can occur in any environment and it is crucial to our studio approach. Tutors and students have to come to an agreement that there is no room for constancy for each participant, and it has to be seen as a problem and to be criticized in the process.

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