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ARCHITECTURAL DESIGN STUDIO REVISITED: RETHINKING THE DYNAM-

ICS OF DESIGN STUDIO SPACE.

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KeyWords

Architecture design studio, circulation in buildings, circulation patterns, creative space, environmental psychology, school of architecture, studio culture.

ABSTRACT

Imagine a world where the movement of people, goods, and services becomes impossible or more or less a city with bewildering pathways! Every single space in a building needs a well-taught-out circulation pattern as this will help not just for movement of people, but interaction, proper ventilation and lighting of space, and for better relaxation and productivity. An Architecture design studio is more than just a class-room space to the young aspiring architect; is a home, a happy place of work for collaboration, interaction, and creativity. There has to be a close connection between the students and the studio masters, and an unhindered flow of furniture, fixtures, drawing tools, gadgets, and interaction between students during studio hours; as this helps for better understanding of once design concept and solutions. This research paper highlights the importance of good studio culture and introduces different ideal patterns that can be adopted for proper interaction, circulation, and productivity.

1.0 INTRODUCTION

The classroom is the most important area in a school. It is an environment that includes various aspects such as psychological, cultural, social, and physical. It is where students and teachers spend a large amount of their time hence, it is an environment that is assumed to promote a reasonable level of concentration in learning activities such as discussing, reading, drafting, drawing, writing, and jury. Designers ought to pay enough attention to environmental aspects when designing classroom environments. They should create a human-centered environment that supports teaching/learning processes and enhances students' and instructors' performance (Rydeen, 2003).

The importance of lighting and ventilation in an interior space cannot be overemphasized, but it should be noted that without proper circulation, there will be undesired shadows and poor sound transmission due to the wrong placement of walls and furniture. This could also lead to accidents and boring studio life. You'll surely agree with me; that spaces well arranged with spacious aisles can invoke a sense of calmness and orderliness. The architecture which in turn leads to increase productivity and creativity.

Classrooms vary in size and function as well as the kind of furnishing and fittings required, depending on what teaching/learning activities are intended. Lecture-based teaching/learning activities, for instance, may require a different setting than other demonstration-based activities. Interior design teaching/learning activities, which may include lecturing, demonstrating, and practicing; require a specific setting that should facilitate such activities. The design-studio classroom is the most crucial space in interior design and architectural education; such space facilitates learning and social activities and influences student's interests and curiosity (Smith, 2011; Demirbas & Demirkan, 2000). Such a learning environment has been described as a place where students carry out their projects while administered by their instructors (Lackney, 1999). It should promote student/student learning and a student/teacher interaction in real-time. Demirbas & Demirkan also pointed out that the design-studio classroom could be

(a) A learning environment that facilitates interior design teaching/learning processes during regular class hours;

(b) A learning environment that enables interior design students to work on their project in their spare time; and

(c) A learning environment that could serve both concepts at the same time; students could work on their projects while others are enjoying a class.IJOAR staff will edit and complete the final formatting of your paper.

Interior design students may spend much of their time in such classroom environments; therefore, these classrooms should facilitate such objectives and provide conditions supportive of these multiple activities. The circulation in the studio should be able to boost attention levels and create space for students to display their best works which in turn leads to inspiration and more fun in the studio life. The purpose of this paper is to examine the design classroom environment as it relates to circulation, exploring the benefit of good studio culture, and suggest possible new patterns that should be ideal for a 21st-century architecture design studio.

1.2. STATEMENT OF PROBLEM

Interaction between students and communication between students-lecturers is very important in studio culture. Having a studio so flexible to bridge this communication gap and still offer a holistic experience for inspiration, research, creativity, and innovation is the major problem of most architecture school studios today.

1.3. AIMS/OBJECTIVES

- Introduce ideal circulation patterns that promote interaction and productivity in studio culture.
- Highlight the benefits of establishing good studio culture across architecture schools.
- Achieve a studio culture that inspires research, innovation, and creative thinking.

1.4. METHODOLOGY

A qualitative research approach was done to get relevant pieces of information for this topic. Past research and publications on Architecture learning pedagogy and studio culture were also analyzed and referenced properly. My personal experience as a graduate architect also; is a major contributing factor to this article.

2.0. DESIGN STUDIO AS A CREATIVE AND COMMUNICATION ENVIRONMENT.

The primary and most important justification for architecture is to provide a better environment for man, community, and society at large. Architectural education could be thought of as educating architects capable of producing meaningful architecture which could be in form of three-dimensional structures of space and form to accommodate related human activities. (Lawson, 1984), thus design education can be regarded as the manifestation of the ability to conceptualize, coordinate, and execute the idea of a built environment encompassing to satisfy the growing needs of humanity.

Design studio education is taking as an organization. Good studio culture is characterized by the organization of people with a common goal to learn, educate, innovate, inspire, and explore better ways to improve human co-existence. The studio should have a designated space for various media presentations such as models, collages, sketches, photos, films, etc. the students should be able to display their best works to inspire others, instructors should be able to interact with students both as a group and individual level,

audiovisual equipment and internet facilities should also be made available for a modern-day design studio.

Depending on what perspective, there is no single definition for creativity. Webster's dictionary defines the term 'creativity' as having its etymological root in the Latin word 'creatus' and meaning "a creation action; ability to create; to create a new thing, form or stage; the outcome of an action or behaviour; produce with a unique talent". Creativity is a phenomenon that can be gained through "time, experience, and education". Additional researches argue that creative behaviours result from a complex interaction between the characteristics of the individual and those of the environment. (Amabile, 1983; 1996). Creativity has more to do with problem identification than problem-solving. Knowledge is not an end in itself, but a means to an end. A greater emphasis should be made on the development of the student's ability to learn how to learn, and a focus on learning and problem-solving processes can increase the opportunity of acquiring knowledge and creative skills. (Rapoport, 1994) argues that not only knowing what is better requires knowledge, but knowledge is needed to understand why it is better, better for what, and better for whom. Knowledge is needed to realize that the built environment, provided by the architect, is in fact, better. According to (Rapoport, 1987) when discussing the issue of creativity, it is important to note that Creativity has more to do with problem identification than problem-solving, and solving problem necessitates acquiring knowledge. Creativity begins in the manifestation of man actualizing himself. It emerges from ones' search into oneself to serve and inspires others. Creativity. The conversation between inside perceptions and outside influences and the interaction between man and his physical and social environment is the catalyst of creativity.



Creativity is an attitude, not a mysterious gift. (Amabile, 1996)

Figure 2.0. Knowledge and creativity moving from individual to organizational level. (KAHVECİOĞLU, 2007)

As Amabile and his colleagues (1996) note, creativity by individuals and teams is a starting point for innovation; the first is a necessary but not sufficient condition for the second. The term creativity is reserved to apply specifically to the generation of noble ideas by individuals or groups, as a necessary step within the innovation process. They also argue that three components were needed to enhance creativity (in a work environment): expertise (technical, procedural & intellectual knowledge), creative thinking skills (how flexibly and imaginatively people approach problems), and motivation. (KAHVECIOĞLU, 2007). Therefore, the architecture studio should consider having personal creative and thinking space as well as group/shared facilities that promote interaction and innovative ideas. The entire architecture studio should be full of creative inspirations and induce a sense of calmness that invokes creative thinking either at an individual or group level. "Creative environments" are generally described as organizations that enable the production of knowledge, facilitate learning from experience, and one other.

3.0. STUDIO CULTURE

We introduce the concept of studio culture in the context of a physical, social, and psychological environment. The concept of studio-based work is central to both practice and education within traditional design disciplines such as architecture and industrial design. Setting up, nurturing, and further improving a good 'studio culture' is regarded as essential for carrying out work, enhancing learning, and passing on experience and competence. In our experience, a design studio culture promotes a style of learning that is based on continuous dialogue, conversation, asking questions, and giving and receiving critique. One often thinks about the studio culture as a place for creative interaction and collaboration. Less often does one think about the design studio as a highly competitive environment; it is a culture that is driven by highly motivated achievers, and it is the highest achievers that tend to develop the standards. (Fallman, 2007) So, as for the professional practitioner, student design activity happens in teams and has deadlines, studio design programs have group projects and deadlines, and these are structured with learning outcomes such as teamwork, timekeeping, and reflective learning. The rise and rise of CAAD, patterns of study and work, and the value of design in society will all affect Architecture and Landscape courses. When it comes to learning and enhancing the skills, competence, and experience of a group of studio members, the design studio culture seems to promote a style of learning that is based on continuous dialogue, conversation, and asking questions, and giving and taking critique—hence somewhat 'Socratic' to its character. This means that in a design studio, work is exposed to others both early in the process and often remains consistently so throughout the process. Here, the physical setting of the design studio is typically meant to emphasize and stimulate communication, collaboration, and sharing. (Fallman, 2007)

"Studio culture holds the architecture world together; it gives everyone involved a mutual understanding's fundamental being." (AIAS, 2016).



Figure 2.2 Styles of knowledge acquiring and transferring and roles of students and student-instructor in the studio. (KAHVECİOĞLU, 2007)

Developing an effective studio culture in Architecture/design schools can help support the following:

- a Design research activities.
- **b** Enhance productivity and proper circulation.
- c Natural and artificial light illumination.
- d Clean and healthy studio life.
- e Orderliness and good communication and interaction in the studio.
- f Quick assimilation of lectures and ideas.

3.1 PHYSICAL ENVIRONMENT:

Is not about what we see, but how we see and interpret it. The studio at a first glance should evoke a sense of orderliness, balance, proportion, symmetry, and rhythm can introduce a sense of harmony. The arrangement of fixtures, and organization of the various zones helps to give a free flow of movement, interactions, and clear visualization of the interior space. When space is well organized, your brain simulates information more efficiently, it helps proper illumination and ventilation of spaces which increase the working hours of students. Careful attention should be paid to the number, size, and design of furniture to be proportional to the given space.

3.2 SOCIAL ENVIRONMENT

The design studio is a social gathering of mind individuals who are creative, multitasking, and full of energy. The traditional drawing studio in some school of architecture provides drawing tables arranged in rows facing the written board in front of the studio and assigned each to students. This does not encourage social interaction. A good studio culture should provide space that encourages social interaction between students, and student-instructors communication. Group works in the studio is an important way for one to learn

from each other's ideas. The studio comprises like-minded people with different skills, some are very good with graphics, some in research and information sourcing, and some in conceptualization, etc. they can all freely learn from each other when they find themselves in a studio organization that encourages social interaction. A studio culture that has space for social interaction gives room for student-student critics which is a very effective way of learning.

3.3 PSYCHOLOGICAL ENVIRONMENT

Space psychology is simply the interaction of people and the space they inhabit. The Design Studio is more than just a 'classroom' to the Architecture students, we see it as our first 'home' in school. The space we occupy has a major role in our psychological behaviour. Temperature, Lighting, colours, configuration, scale, proportions, acoustics, and materials address the senses of the individual and generate a spectrum of feelings and practices. The form and feel of the studio interior have a direct impact on your subconscious, contributing to your emotions and perceptions. There should be a visual-continuity with nature outside which can be achieved through large glass window openings; this can help create a sense of calmness and serenity in the interior space. Key factors, that architects need to pay attention to, include safety, social connectedness, ease of movement, and sensory stimulation; more concrete measures encompass light, colours, art, ventilation, etc. Colours, on the other hand, have a very simple logic behind them, the warmer the colour is, the more compact space becomes. According to an environmental psychology professor; Irving Weiner, AIA, at Massasoit Community College in Middleborough, Mass states that "some of these environmental influences we cannot see or touch, yet they have a direct influence on our behaviour or mood." This simply means that the factors of space psychology are not easily discernable. It takes one with research and design experience to get it right. Further research also reveals that spaces have memory, it suggests that physical features anchors, prime and help us remember things i.e. a students seeing conceptual flow diagram, and site analysis procedures properly done and hanging on the wall (inspirational zone) can help trigger specific behaviours and influence his approach to design thinking.

"We shape our buildings, thereafter they shape us." (Winston Churchill, 1943)

4.0 CONTEMPORARY ARCHITECTURE STUDIO

The figure below (4.1) categorizes spaces in contemporary Architecture schools into 'public spaces and creative spaces. For this research work, we will look at the creative space and how the various zones proposed can influence creative and innovative thinking and enhance circulation, productivity, and communication in the studio.



Figure 4.1 showing ideal/major spaces in Architecture Schools.

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4.1. CREATIVE SPACE

Creativity is a phenomenon that can be gained through "time, experience, and education". Contemporary design studios can be divided into multiple functional zones that support different learning experiences; student-student interaction, and student-instructor communication. The creative space which is mostly referred to as 'Design Studio' should be flexible enough to adapt to changing needs in educational and professional requirements. The creative space is divided into four major zones based on the study of 'studio culture' as stated in 3.0 of this research work and personal experience gained as a graduate Architect. Every zone is organized such that the focal point (i.e. whiteboard, projector screen) can be seen clearly from any giving angle. The instructor can move freely and interact with/share ideas.

A. Drafting zone: This space takes up to 1/3 of the entire creative space as the major zone that forms a semi-open, semipersonal space. Here, each student has his or her drafting table and stool. The table is designed such that is adjustable and moveable for easy drafting. The zone can also serve as a seating point for students to receive lectures in the form of audiovisuals, firms, illustrations, etc.



Figure 4.2 Minimum drafting workspace is needed for each architecture student (Ernest Neufert, 2011).

- B. Modeling Zone: Architectural models are an important object for an idea and creative expression. With the advent of new technology in design and construction, one would have thought that models would have been faced-away, rather is becoming even more interesting and necessary for communication, marketing, public display guidance, etc. The act of model making cuts across every level of architectural discipline and education; both as a student and professional practice. Most Architectural schools haven't seen the need to incorporate this space as a special zone into the studio culture, rather ignored and student misuse drafting table for cutting and joining purposes. To have a clean and healthy environment, a special zone should be allocated for model making not separate from the drafting/design studio as instructors will need it in some cases to do illustrations. The model making space should contain sets of cutting tables, stools/common bench, Models at various stages of completion are abundant; printouts, pencils, pens, scissors, sticky-tapes are present; walls are covered with annotated sketches, scenarios, pictures of real users with comments, printouts of persona characters, Post IT-notes organized in groups; and so on. Individual lockers should be located adjacent to it for drawing, tools, and material storage.
- C. Inspirational Zone: Humans are inspired by what we see. A first-year student who doesn't yet understand shapes and forms; is the same as a final year student who looks for inspiration through case studies. The architecture studio as a "creative space" should have a zone for students to display their best drawings, models, quotes, case studies, collages, etc. to inspire each other and at the same time, making the studio a lively and happy place of work full of creativity. This space can either be located close to a wall and short tables for the display of models.

D. Groupwork Zone: As stated in 2.0, good studio culture is characterized by the organization of people with a common goal to learn, educate, innovate, inspire, and explore better ways to improve human co-existence. In professional practice, Architects work in teams with other building professionals to actualize a giving project task, it is therefore necessary for incorporating this earlier into the studio culture to create a social environment for easy sharing of ideas. The zone typically contains a long table and chairs to accommodate a group or team of students. This zone is primarily intended for collective work around a particular topic, i.e. typically two or three members of the group sketching together, putting together a prototype, or just discussing a particular project-related issue. With the advent of CAD, students can work individually in this same zone; sharing ideas and learning from each other. Instructors can also take advantage of this zone to give an illustration and further explanation in groups.

Every Architecture studio should be an Incubator for great designs, a citadel of learning, a paradigm of academic excellence, and a happy place of work for both students and instructors. (¹Daibi-Oruene, 2020)



4.2 PROPOSED ARCHITECTURE DESIGN STUDIO ORGANIZATION

Figure 4.3. Proposed Architecture Design studio (Creative space) 'First sample'

The 'first sample' shown above clearly defines all the zones in the entire 'creative space as shown in figure 4.1. the arrows show a clear circulation pattern in the studio with zone A-for drafting, B-for modeling, C-for inspirational and the model display area, D-for

group work, team building, social interaction, and co-working space. In this first sample, the zone for modeling is separated with drawers of 3-4 levels but allowing space for free-flow movement of air, light, and people as part of the entire creative space. The group work area (D), drafting space (A), and the inspirational zones (C) are all strongly related as part of the student-instructors communication process. A whiteboard and projector display is positioned in front of the studio for more ways of communication and learning. This is suitable for schools with more space available and requires the highest standard of studio culture. The entire area is 320.60m² (13.6x23.6m) as the minimum space required. Depending on the needs of the school it could be expanded to accommodate a certain number of students and equipment.



Figure 4.4. Proposed Architecture Design studio (Creative space) 'Second sample'

The 'second sample' as shown in figure 4.4, brings the entire drafting zone and instructor in front of the creative space while grouping the group work and modeling zone as one shared space, with areas for inspiration and work displayed behind. This organization pattern is good for space management and for studio culture that wants to achieve a clear distinction between the drafting/lecture zone from every other zone in the creative space (design studio). The minimum area required is 199.500m² (10.5x19.0m). the arrows indicate movement/circulation pattern. The instructor seats in front of the studio with a projector screen and whiteboard behind to give lectures, and can also move freely around the studio to interact one-on-one with the students.

5.0. CONCLUSION AND RECOMMENDATION

The design studio is not just an open space or a rectangular box shape. A well-designed studio can only be said to be achieved when the physical, social, psychological environment have been properly addressed. Also, the application of elements of design such as balance, rhythm, unity, proportion, etc. can be seen and experienced in the interior space. Lighting, ventilation, acoustic, are also more requirement that needs to be paid attention to. Creativity is a phenomenon that can be gained through "time, experience, and education"; the studio as a social space is one of the fastest ways to help increase once creative and thinking ability through student-student, and student to instructor's effective communication and interaction. Schools of architecture should rather begin to consider modern ways as proposed in this research paper on how to reshape and restructure their studio culture and creative space in other to get the best of their students and lecturers.

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