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Ashraf M. Salama and Michael J. Crosbie (editors)

OPEN AND CELL-TYPE DESIGN STUDIOS: THEIR IMPACT ON ARCHITECTURAL EDUCATION

Elmira Gur

Abstract

"Architectural design studio" class constitutes the basis of architectural education. In Istanbul Technical University Faculty of Architecture, architectural design studios are categorized into two types in terms of spatial use: "open design studios" and "cell-type design studios".

This study primarily aims to determine the physical characteristics of both studio types as learning environments where the "design process" takes place in architectural education, as well as investigating the studio space with its sub-components. Second, it aims to cross-examine the relation of communication and interaction between students and the tutor to the physical characteristics of the architectural studio space. Finally, the study attempts to examine various effects of different physical characteristics pertaining to "open" and "cell-type design studios" on both positive and negative behavior patterns among students. To this purpose, the study includes a survey on user experiences in design studios. The findings of the survey are expected to be useful for determining the design of architectural design studios.

Keywords

Architectural design education, design studio education, the physical environment of design studios, student-tutor interaction.

Introduction

As a fundamental course in the curriculum of architectural education, the "architectural design studio course" is an applied course in which the architectural design process takes place in an artificial setting. Considering the importance given by educational institutions in general and academics in particular, as well as the time allocated for the course, architectural design studios serve a highly significant educational purpose (Sener &Sener, 2003). The architectural design studio course in Istanbul Technical University covers a four-year education in eight semesters following one another. "Design studio" is not only the name of the course but also the classroom itself, where students have the opportunity to choose a different tutor every semester, who works with an average number of 10-15 students.

The Scope of the Research

The architectural design studio course offered in the Faculty of Architecture in Istanbul Technical University requires architect candidates to work on a pre-defined project plot for fourteen weeks

Figure 1: General View of Cell-Type Design Studio. (Source: Author).

and eight hours a week in each semester. The learning process consists of team work or group work, for creativity is reinforced by collaboration and cooperation (Salama, 1995). For this reason, collaborative and cooperative involvement establishes the core of design studio education.

In I.T.U. Faculty of Architecture, the studio courses take place in two types of physical environments: "cell-type design studio" (Figure-1) and "open design studio" (Figure-2). The main difference between these types of environment is that one or two project groups have the course in "cell-type design studios", whereas almost ten project groups share the same space in "open design studios".

Figure 2: General View of Open Design Studio. (Source: Author).

Therefore, given the fact that semesters last for a limited period of time, it is crucial to arrange the spatial and physical features of the architectural design studio course in such a way that the whole process will contribute to the design education period as much as possible.

Research Objectives

Similar to all other branches of design education, creativity plays a significant role in architectural design as well. In the studio environment, as soon as the first ideas start to appear, the indirect but strong link between design and creativity is

also established. As Candy and Edmonds (1996) highlight, it is important to gain experience from past examples, to produce possible methods and strategies out of collected information, to synthesize the visual perceptions, and to experience various information in this studio.

Cuff (1991), on the other hand, describes studio education not only as a "work place" but also as the combination of "home" and " work place", which is similar to the contemporary concept of home-office. The reason for approaching studio education in terms of home-office is the relatively long period of time spent in the process of studio education. In such an environment, students should perceive the studio as a place where they can work enthusiastically both in and after class hours.

Therefore, the first objective of this study is to observe and determine the physical characteristics of the studio types mentioned above, as well as the studio space and its sub-components, where "architectural design" takes place. Second, we aim to compare and cross-examine the relation of the results of communication and interaction between students and the tutor to the physical characteristics of the architectural studio space. In the case of a relation, we will investigate which distinct properties of each studio type cause what kind of behavior patterns, and whether or not they create discontent. The reason for a trend in spatial choices, and if there is, the advantages and/or disadvantages of the trend will also be investigated.

Research Method

A survey has been conducted among the students who use different types of physical environments to inquire about the above-mentioned educational requirements and spatial properties. The survey was composed of a self-designed standard questionnaire. By analyzing the effect of studio space on the design education, we tried to reveal students' preferences about the studio environment and its physical characteristics.

To this end, 174 students were inquired in the survey, 71 of whom were students using a cell-type design studio, while 103 of them were using open design studios. Data were collected about students' experiences and desires related to the studios they worked in, which could later be used for the design of architectural design studios.

Evaluation of the Survey Design

Two groups of students participated in the survey. In the first group, students were placed in a cell-type studio environment where a couple of tutors shared the same space with their separate student groups. On the other hand, the second group consisted of students working in an open studio where up to ten studio groups are separated from each other by separator panels. The same questions were posed to all the students in both groups, and their responses and tendencies are demonstrated in the graphics below.

The findings clearly indicate that students in semester 3-4 mostly study in "cell-type studios" (35% of students were in semester 6-7, and 65% of students studied in semester 3-4), while the ratio of students in semester 3-4 to the ones in semester 6-7 is equal in "open studios".

Considering students' satisfaction, the findings

reveal that 71% of the students studying in "open studios" are pleased with their physical environment while 29% are not. However, 38% of the students studying in "cell-type studios" are pleased with their study environment and 62% are not (Figures-3 & 4).

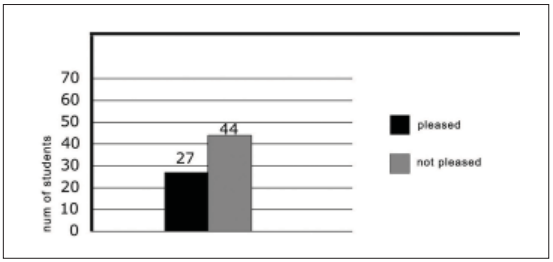

Figure 3: Pleased / Not Pleased Students in Cell Type Studios. (Source: Author).

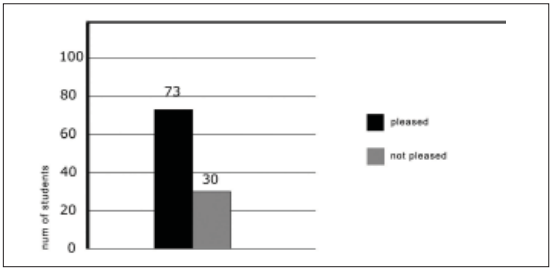

Figure 4: Pleased / Not Pleased Students iin Open Studios. (Source: Author).

Student Preferences of Studio Environment

When the students of "cell-type studio" group were asked in what type of a studio they would like to attend their courses, 27% preferred "cell-type studios", 30% preferred "open studios", 33% preferred "personalized space in open design studios", 7% preferred virtual (reality) studios, and %3 responded the question with the choice "other".

When the same question was posed to the students of "open studio" group, 13% preferred "cell-type studios", 60% preferred "open studios", 14% preferred "personalized space in open design studios", 10% preferred virtual (reality) studios, and again 3% gave the answer "other".

The Effect of Studio Environment on the Relationship between the Tutor and Students

It was interesting to note that both groups gave the same answers when the question "What effects does the studio space have on the tutor-student relationship?" was asked. 47% of the students stated that the studio environment did not contribute at all to their interaction with the tutors, while 29% suggested that space had a positive role on this relationship, and 24% suggested just the opposite.

Opinions about Separators in the Studio Environment

When the students were interrogated about how they would feel if the separator panels between different project groups in a large classroom were removed, 7% of the students in cell-type studios said that it would be positive, 66% negative, while 12% suggested it would not make any difference, and another 12% expressed that it would confuse them; finally 3% told they would feel more relieved (Figure-5).

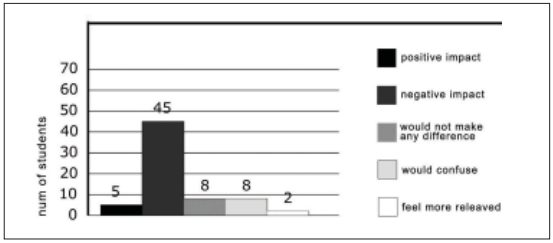

Figure 5: Impacts of Separators on Cell-Type Studio Students. (Source: Author).

On the other hand, when the students of open studios were asked the same question, only 4% thought it would be positive, 73% said it would be negative, 9% suggested it would not make any difference, 12% expressed that it would confuse them, and finally 2% told they would feel more relieved (Figure-6).

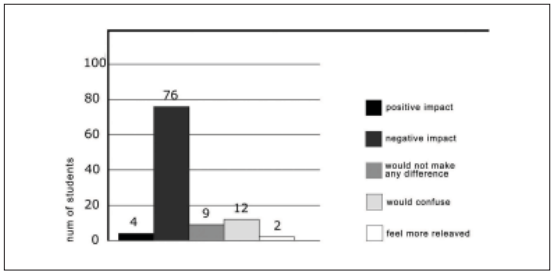

Figure 6: Impacts of Separators on Open Studio Students. (Source: Author).

The Advantages and Disadvantages of Cell-Type Design Studios

The survey also inquired the participant students about the advantages of cell-type studios. The findings of this particular question reveal that 29% of the students stated the main advantage as sincerity; for 23% it was individualization of the space; another 23% stated quietness was the main advantage; for 2% of students the advantage was prevention of distraction; for another 2% it was the separator panels, and 1% stated "other"(Figure-7).

When the students of open design studios were asked to evaluate the advantages of cell-type studios, the following results were obtained: 24% of the students stated the main advantage as sincerity; for 21% it was individualization of the space; 24% suggested that quietness was the main benefit; for 26% it was prevention of distraction; 4.5% highlighted the benefits of separator panels, and 0.5% stated "other" (Figure-8).

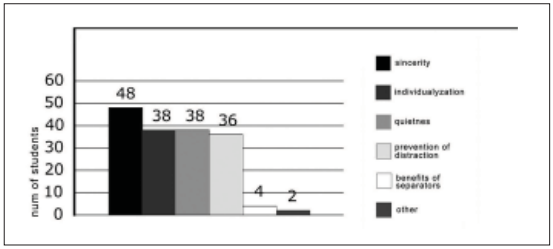

Figure 7: Advantages of Cell Type Studios according to Cell Type Studio Students. (Source: Author).

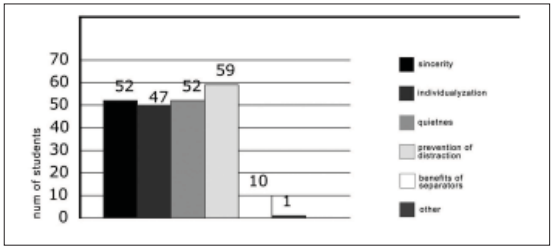

Figure 8: Advantages of Cell Type Studios according to Open Studio Students. (Source: Author).

When it comes to the disadvantages of cell-type studios from the point of view of the students in cell-type studios, 25% of the students stated that the disadvantage was unawareness of other groups' works; for 2% it was the quietness of the space; 20% stated that lack of communication with friends in other groups was the main disadvantage; for 21% it was inconvenience or distress due to the small space; 19% highlighted the negative effects of insufficient ventilation in the room; 12% felt that too much control of the tutor was a disadvantage, and %1 stated "other".

When the same question was asked to the students of open design studios, the following findings were obtained: 23% of the students expressed that unawareness of other groups' works was the main disadvantage; for 4% it was the quietness of the space; 19% mentioned lack of communication with their friends in other groups; 20% stated that inconvenience or distress due to the small space was a disadvantage; 19% underlined the negative impact of insufficient ventilation in the room; 14% pointed out the negative outcome of feeling too much control of the tutor, and 1% stated "other".

The Advantages and Disadvantages of Open Design Studios

Another parameter that was inquired in the survey was the size of the studio space. First, the students of cell-type studios were asked to assume that their studio type was open studio. They came up with the following list of advantages: 34% of the students stated that the main advantage of open studios was the opportunity to be aware of other groups' works; for 30% it was visual communication with other groups; 27% highlighted the flexibility of the space allocated for groups; for 7% the main advantage was less control from the tutor, and 2% stated "other".

The students of open studios were also asked to determine the advantages of their work environment. The findings reveal that 31% of these students suggested that being aware of other groups' works was the main advantage; for 32% it was visual communication with other groups; 26% stated the advantage to be flexibility of the space allocated for groups; 9% highlighted the advantage of less control from the tutor, and 2% stated "other".

When it came to considering the disadvantages of open studios, again the students of cell-type studios were asked about their opinions first. The findings reveal that 32% of the students of cell-type studios stated that distraction of attention was a major disadvantage, while for 38% it was noise; 4% suggested that low temperature in the studio was a source of disadvantage, and for 6% it was interior breeze or wind; 19% highlighted the distraction of the tutor, and %1 stated "other".

When the students of open studios were inquired about their opinions about the disadvantages of open studios, the following results were obtained: 27% of the students of open studios stated that distraction of attention was a major disadvantage, while for 40% it was noise; 7% mentioned the low temperature in the studio as a disadvantage, and for 7% it was interior breeze or wind; 17% highlighted the negative effect of the distraction of the tutor, and 2% stated "other".

Overall Evaluation

When the data collected from the survey are analyzed, it is seen that while the students of open studios reveal a high level of satisfaction with their work space, the same rate is lower for the students of cell-type studios.

Another conclusion is that the students of open studios mostly prefer studying in their current work environment; however, the students of cell-type studios desire more individualized space within an open studio in the first place. Their second and third choices are an open studio and their own cell-type studio respectively.

All survey subjects stated that the physical environment of the studios they worked in did not contribute to the interaction between the

students and the tutor. Also, all survey subjects seem to agree on the importance and positive impact of separator panels.

The common view of both student groups seems to suggest that "an open design studio" with individualized space" is the best form of study environment for them. However, it was also found out that a flexible arrangement of space within the cell-type design studio would enhance their satisfaction with their work environment.

The findings demonstrate that the most important aspect of a design studio for the students of open studios is "visual communication with other groups". However, for the students of cell-type design studios, it is "awareness of other groups". In fact, the students of cell-type studios have come to ignore the importance of visual communication that is already lacking in their work environment. For an increased level of creativity in the studio, the students prefer freedom of perception at their own will and timing rather than visual and cognitive isolation.

Although the open design studio is mostly preferred by students, this model also seems to be blamed for poor acoustics and distraction of attention on part of both the students and tutors. The preferred aspects of the cell-type studios are spatial sincerity, individualization, quietness and prevention of distraction. On the other hand, the major disadvantages for students in both groups include the distressing or inconvenient size of the environment, unawareness of other groups, and lack of communication with other groups.

Conclusion

Obviously, design studios play a crucial role in architectural education. The survey inquires about and demonstrates the positive and negative aspects pertaining to the effect of "open" and "cell-type" design studios and their spatial organization on the student-tutor behavior patterns. In this study, students' preferences and tendencies about the design studios they work in are expressed clearly. Consequently, considering the dual nature of the outcomes pertaining to the advantages and disadvantages of both groups, it is maintained that both types of studios should exist to offer a variety in architectural education. Naturally, the students who have not been able to enjoy the opportunities of a flexible environment may require other more individualized and small group spaces.

It would not be wrong to suggest that students in general opt for "open design studio groups" situated in a large classroom provided that acoustic convenience is maintained, individualization and belonging are provided by means of moveable panels, and interaction with other groups is always fostered based on students' preferences.

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Elmira Gur

Dr. Elmira Gur is an architect and an assistant professor in the Faculty of Architecture of Istanbul Technical University. She has received her M.Arch. degree in 1992, from Yildiz Technical University (YTU), Department of Architecture, and her PhD. Degree in 2001, from ITU Institute of Science and Technology, Architectural Design Program with a thesis entitled "A Changeable / Transformable / Flexible "Physical Environment Model" for Child Development Centers". She teaches architectural design and she has taught several architectural design studios at ITU. She had completed various architectural projects; had received several architectural design awards. Her researches and her writings have been published nationally and internationally. Her research interests include architectural design, creativity in design education, design studio's physical environment, housing development, post- disaster temporary shelter, preschool child's physical environment and urban space identity. She is the author and co-author of several published papers on design education, child development centers, housing development, post-disaster temporary shelters, and urban space identity. She can be contacted at elmiragur at gmail.com.