LEARNING AND ENVIRONMENTAL DESIGN:
Softer Learning Spaces

E. Ümrán TOPÇU
Faculty of Architecture and Design,
Bahcesehir University
umran.topcu@bahcesehir.edu.tr

Abstract
Learning is a central part of everyone’s life that is often associated with school and classrooms. Today’s classroom looks and functions like the classroom of an earlier century. Desks lined up in neat rows, facing the teacher and a board or screen is the general condition in many educational institutions. Most of us have sat through classes in plain, hard rooms. Although they did not look very pleasant, we all coped with them. If they could be designed slightly more tolerable, would they help in the betterment of education and learning in any measurable way? This paper aims at describing an attempt to design an alternative classroom. Based on several years of experience, it is observed that there is a demand among students for softer, warmer and more intimate instructional spaces. Students of “People and Environment” Course were asked to select a suitable space to redesign as a “Soft Classroom” within Bahçeşehir University Besiktas Campus premises. This case study presented a potential research project to better understand, how student engagement can be increased by changing learning spaces.

Keywords: Learning; environment; faculty; soft classroom.

INTRODUCTION
The new millennium is apparently a new phase regarding the development of all aspects of architecture and the built environment that stages learning activities. Learning is a central part of everyone’s life which is often associated with school and classrooms. Classroom of today looks and functions very similar to the classroom of an earlier century. Desks lined up in rows, facing the board or a screen. This is the model born of the industrial age. Can it still meet the educational challenges of this millennium? Students are changing as the technologies change. So should the learning spaces that best fit their needs.

Formal higher education is a process that brings together the students, educators and sets of structured educational resources. This is a purposeful activity where education is the central act and the students and the educators are the main actors. Educational resources serve as mediating artifacts between the two. The daily pulse of a college or university is largely dictated by the classroom schedule. Many educators, however, increasingly argue that such classrooms are largely ineffective as learning environments and they should not continue to be built (Schank, 1997). But, what should take their place? In considering the future of the learning space, this paper is an attempt to discuss (1) a few of the reasons why traditional classrooms are inadequate and need to change, (2) some ideas that break with these traditions, and (3) suggesting areas for future learning spaces that are pioneering than imitative.

Students spend thousands of hours in classrooms and therefore classrooms are automatically are among the most important physical structures in the academic arena. Although much has been written about classroom environments in the sense of organizational structure or social environment, much less has been written about the physical environment of the classroom (Douglas & Gifford, 2001). The traditional classroom can be transformed through an appreciation of differing approaches to teaching and learning, application of effective physical design and adoption of instructional technology. From a student-centered perspective, learning is an active, participatory, experiential and cooperative process whereby student and teacher co-create the learning experience (Neill & Etheridge, 2008). While recent marketing education research
recognizes the value of student-centered learning (Hernandez, 2002; Laverie, 2006) and providing a range of learning experiences (Karns, 2006), our understanding of the role of physical space in enabling teaching and learning is limited. As the paradigm in education shifts from teacher to student and from passive to active learning, there is renewed interest in the effect of space on learning behaviors and instruction (Betoret & Artiga, 2004). The traditional classroom with its fixed arrangement constrains teaching and learning to one-way, linear flows. To address this connection between space and learning, one of the earlier attempts was initiated by Robert Sommer & Helge Olsen. They redesigned a plain 30 seat college classroom at the Davis Campus of the University of California. With a very small budget they changed it into a soft classroom with semicircular, cushion-covered bench seating, adjustable lighting, a small carpet and some mobiles. Compared to traditional classrooms of similar size, student participation increased markedly in the soft classroom (Gifford, 1997).

Learning is a central part of everyone’s life. It occurs everywhere even when people do not think of themselves as learning. We can learn while walking on the beach or when we talk over events of the day. Learning is usually associated with school although much learning occurs before we reach school age. Learning occurs in places where the designated purpose of setting is not education and in places where learning is incidental not to the primary purpose of the setting.

Learning is a function of both the biology and the ecology of the individual. Learning produces development and the classroom is a critical and costly component of this ecology. Vast amounts of money is spent on educating individuals of all ages. Environmental psychologists believe that educational settings can and should make education both more efficient and more enjoyable. The physical setting may not make or break education on its own but it can interact with non-environmental factors either to promote or to hinder learning process (Gifford, 1997). The general framework of the introduction is presented in Figure 1.

About three decades ago, Edgar Dale described what he called the “experience cone” which orders different modes of learning according to their power (Figure 2). Retention is worst with the
modes at the top of this cone and best with those at the bottom. More recently, authentic learning has been a topic in the teacher-preparation debate, with future teachers being urged to use student-centered, constructivist, depth versus breadth approaches in their classes, yet finding themselves being taught by traditional teaching approaches. “Don’t do as I do, but do as I say” turns out to be a particularly ineffective model for long-term behavior (Long & Ehrmann, 2005).


A modern pioneer in educational environmental psychology, Carol Weinstein (1981) has summarized four assumptions made by environmental psychologists who study learning and the physical environment.

1. Although the setting usually does not teach directly, it can either facilitate or hinder learning, both directly and symbolically. Loud noise for example, may directly interfere with the transmission of information from teacher to learner. In addition, a drab, untidy classroom may symbolize to learners that the school and teacher care little about their progress.

2. The effects of the physical setting on learning are not universal but are moderated by the social and instructional context. For example, open plan schools work poorly when educators merely import their teaching methods from traditional schools with separate classrooms but often work better when teaching methods suited to open space are used.

3. There is no single best learning setting. The best physical settings are those congruent with the type of material being learned, the goals of the class and the characteristics of the learners.

4. Learning is maximized when the physical setting is considered as carefully as are other aspects of the learning situation, such as the curriculum, the teachers’ verbal ability and other teaching aids. Unfortunately, most educational programs still pay little attention to the physical setting.

The path from design research to environmental action is full of obstacles. Introducing a new physical form requires people to change established patterns of behavior. Even within a Faculty of Design, it is easier to plan a settlement on the moon than to change a single classroom. Early evidence suggests that inexpensive changes to make classrooms more pleasant have tangible benefits for education.

The task of environmental psychologists who study learning is to identify conditions under which physical and nonphysical elements of the setting combine to result in improved learning.
Where does academic learning really take place? This paper focuses on the rooms where instructors and students interact. The paper is concerned with the role of the physical environment in learning, including factors as architecture, furniture arrangement, lighting and room design.

**METHODOLOGY**

During the delivery of “People and Environment Course” to Level III in 2011-2012 Fall Term, Interior Design students of Faculty of Architecture and Design at Bahçeşehir University were asked “What kind of classroom designs might be better at supporting learning in the university?”. Four ideas proposed by the students can be summarized as useful in imagining their impressions of an ideal classroom:

1. “Learning by doing” matters.
2. “Context” matters.
4. “Location of learning” matters.

Classrooms should support the activities of effective learning. What should such spaces look like? Do any such space yet exist? Once students arrive in the classroom, the faculty member can help students deal with difficult ideas and nuances and then can prepare and motivate students for the next round of work. What kind of classroom space is most effective and efficient for this? Ideally, such learning spaces should support several key activities.

1. Students need to be able to hear what the faculty member and other students say and see what other people show, even if objects are small.
2. Students need to be able to replay this material, perhaps instantly.
3. Students need to be able to try something someone suggests, then and there.
4. Students need to be able to work for short times in small groups, observing and critiquing one another’s work.
5. Students need to be able to respond to questions, from their peers as well as from the instructor.
6. The lecturer needs to be able to display student response patterns and use them to provoke further discussion.

After all the above information was driven from class discussions, “People and Environment” course students were given a Final Assignment of “Redesigning a Classroom of their choice into a Soft Classroom” in the premises of Bahçeşehir University Beşiktaş Campus. All classrooms on Bahçeşehir University Campus have chairs in straight rows facing towards the board whereas smaller classrooms have portable chairs. Based on several years of experience of teaching People and Environment Course and lecturing on an alternative classroom design, it was observed that a strong demand among students impended for a softer, warmer and more intimate instructional space. The author’s previous studies revealed that little classroom participation actually took place during the courses. Even in a small seminar, student comments occupied an average of 10 minutes out of an hour. The rest of the time was taken up by the lecturer. In larger classes, the student initiated discussion proved to be even less, about 3.5 minutes, much of it being about administrative matters. When a class had a large amount of participation such as “People and Environment” course 2011-2012 Fall Term (87 students), this meant discussion between the instructor and individual students. There was considerable whispering among those in adjacent seats, but there was little or no attempt to initiate a discussion between the students. The straight row arrangement conveyed the message that only the instructor was capable of responding to students’ inquiry.

Classroom A 205 (Figure 3) in the A Block of Bahçeşehir Campus was chosen as a case study by a group of 7 students. The definition of as is condition of the Classroom A 205 by the students was:
The classroom number 205 in the A Block is 62 sqm. It consists of seating for approximately 40 students. The individual seats for students are in grey and maroon. The flooring is wood-like linoleum. There is the speaker's corner in the classroom and the screen serves for the projector. The windows are at the rear. The walls are all white with no notice boards but clothes hanging equipment. Illumination is provided by means of a suspended ceiling with square shaped fluorescent lighting fixtures installed in it.

The definition of the Soft Classroom Design proposal (Figure 4) of the students was:

The main consideration of the design proposal is to make it more dynamic and flexible. While trying to establish this, the consideration of transforming the class to a warmer environment for the students is kept as the main goal. Turning the corners curvilinear is the starting point. As for the aspect of dynamism, all the classroom walls being used for poster hangings by magnets. The class is divided into two areas, first being designed for 2D learning. The instructor can use the board and 2D projector at the same time. The second area is the 3D learning area.

This place is formed by a canvas system. It opens and makes space for 3D. When the system is open, it provides space for walking around the projector and when closed hallstand function area appears. The new chair is designed so as to be easy moving with the reels under its legs. With these reels the chair can easily move between two areas while the user is seated. For a more specialized chair design and making it more appealing for the students a shelf is created just above the reels for the students to keep their belongings. What is more, when the lights are down students can use the LED light fixture installed in the chairs writing table to take down notes. As for the colors used all over the classroom, the new surrounding walls are ice blue while seats are in peach. The floor, which used to be white, is now beige linoleum. White is a traditional color but it undermines the purpose of the classroom.

White reflects the light and may cause glare. The walls are in ice blue to provide a sense of water and sea to give the students a feeling of relaxation. According to research, peach and rose are used in schools because they are preferred over bolder colors. Bold colors may create distraction. As for the soft classroom lighting, one attractive option is the installation of fluorescent cove lighting around the perimeter of the room. This makes the room look much brighter. The strip lighting itself is not expensive but it requires detailing that affects the construction budget. Perception of an all round high level of illumination, rather than lighting that focuses on seating, can be a psychological plus for students. Flexibility is always important in standard classroom lighting design. Some areas of the classroom still opt for a multilevel switching system as a simple and cost-effective solution. Multilevel switching that works with three series of lamps to create low, medium and high levels of illumination is designed. The cost for fluorescent dimming systems that provide the integration of daylight and artificial lighting is more affordable.

Students, like faculty, prefer to control their environment. The ability to rearrange seats and adjust the lighting makes it possible for the same place to be used in many ways, by different groups.

CONCLUSIONS

This article focuses on the classrooms where students and teachers interact, because they are not so easy to create, renovate and maintain and the daily schedule of academic activities are shaped by them. The students’ ability to imagine a new classroom is shaped by changes in their own beliefs about learning spaces. We live in a fast and continuously changing world, so university, faculty, staff and students should keep on asking the following questions about learning spaces:

• What are we as a course and as an academic community doing with our current spaces?
• How can we utilize these spaces for more effective teaching and learning?
• How can we improve our learning spaces so that we can organize our teaching and learning better?

What can be recommended by the end of this paper might be an advise such as:
• Education should move its focus from formal to emphasizing learning in both formal and non-formal settings
• University level education should no more be seen as listening, reading and taking down notes but as seeing learning as being situated in action, collaboration, coaching and reflection
• Students and faculty should not be seen as the users of learning spaces designed by specialists that cannot be changed after completion, but people whose impressions of better teaching and learning shapes pioneering new learning spaces.

As a final statement it can be said that, this research had little impact on the faculty administration, as scarcity of space is one of the main problems all over the campus. But, there is always hope for better teaching and learning spaces. Good learning space design can support an institution’s mission of enabling student learning and convergence of space can lead to exciting new models of campus interaction.

![Figure 3: Current design of Classroom A 205 (Source: Author).](image)

![Figure 4: Students' Soft Classroom Design Proposal (Source: Author).](image)
REFERENCES


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Author:

E. Ümran TOPÇU PhD
Assistant Professor
Faculty of Architecture and Design,
Bahcesehir University,
umran.topcu@bahcesehir.edu.tr