

# Crossing the Cultural Divide: A Contemporary Holistic Framework for Conceptualising Design Studio Education

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KEYWORDS: design studio, learning environment, online education

## ABSTRACT

While the studio is widely accepted as the learning environment where architecture students most effectively learn how to design (Mahgoub, 2007:195), there are surprisingly few studies that attempt to identify in a qualitative way the interrelated factors that contribute to and support design studio learning (Bose, 2007:131). Such a situation seems problematic given the changes and challenges facing education including design education. Overall, there is growing support for re-examining (perhaps redefining) the design studio particularly in response to the impact of new technologies but as this paper argues this should not occur independently of the other elements and qualities comprising the design studio. In this respect, this paper describes a framework developed for a doctoral project concerned with capturing and more holistically understanding the complexity and potential of the design studio to operate within an increasingly and largely unpredictable global context. Integral to this is a comparative analysis of selected cases underpinned by grounded theory methodology of the traditional design studio and the virtual design studio informed by emerging pedagogical theory and the experiences of those most intimately involved – students and lecturers. In addition to providing a conceptual model for future research, the framework is of value to educators currently interested in developing as well as evaluating learning environments for design.

## INTRODUCTION

According to Fisher (2003:15) a large number of studies can be found about the effects of the physical environment and ICT (Information and Communication Technology) on students learning but most of them include quantitative studies which link test scores to building condition [physical features]. He suggests that as a result, a lack of attention to qualitative perceptions of students and lecturers about their learning environment can be observed. For this study it was found that research about design studios is generally limited

to studio pedagogy, culture, and technology with other aspects removed from focus. In terms of the future, a more comprehensive approach is needed. For instance, Bender and Vredevoogd (2006:120) believe that more research about the impact of the online environment in architecture education is necessary due to rapid changes in design process, architectural practice, and students population.

This paper offers a framework for understanding, analysing, and exploiting design studios as a learning environment in a more comprehensive and holistic way. It has been developed from a detailed review of seminal literature for a PhD study concerned with comparing virtual (online or distance) and traditional (face-to-face or on-campus) design studios as two kinds of learning environments, to distinguish the benefits and limitations of each through qualitative perceptions of learners and tutors.

## I. CONTEXT

In recent decades, education has been confronted by major global changes socially, technologically, and pedagogically. While the learning environment itself has only undergone minor changes in this new world, it continues to play an important role in student progress and, as such should be more responsive to these wider changes (Jamieson, Fisher, Gilding, Taylor, & Trevitt, 2000:225). To address this deficiency, the relationship between learning approach and environment must be defined by considering factors increasingly impacting on learning activities. In support of this are several studies such as the work by Trigwell et al. (1995:723) on the relationship between learning environment and education approaches; research by Bender and Vredevoogd (2006:114) on the process and culture of the design studio when considered in relation to ICT and the provision of universal access, interactive media and multimedia resources; as well as research by Kvan (2001:347-348) who explains that design teaching generally begins with introducing a design problem which includes

project features, curriculum attributes (duration, outcomes), and objects.

While these studies can inform development of more contemporary learning environments they are limited in their consideration of other influencing factors and elements. In this paper and the research informing the paper, this has been addressed by bringing normally conceived disparate elements together to form an integrated framework as illustrated in Figure 1.

Providing a credible basis to the development of a holistic framework is the process of skill and knowledge acquisition. In fact, the design of a course needs to address the materials (what), objectives (why), methodology (how), and management (who) (Sagun, Demirkan, & Goktepe, 2001:336). More specifically, Fisher (2005:166) highlights the following questions as providing a focus for research and action:

- “What student abilities do we want to achieve?”
- How can we assess these attributes?
- What pedagogies should be used to achieve these desired learning outcomes?
- What learning environments should be developed to fit these pedagogies?
- How can we develop a pilot program and evaluate it?”

Every learning activity needs a place to occur (where), learner to learn, teachers to teach, a process which works under a specific method, and finally a result or output (for example, enhancing knowledge, producing project). The main factors that directly related to design studio education then are: teachers and learners forming the community of design studio (who), method that defines the process of learning (how), projects that can be considered as driving learning output (why), and content as the material of design education (what). There are also four other factors which are connected to studio education, including technology, assessment, physical environment, and culture.

#### A. Analysing Other Frameworks

In this section, the results of a comprehensive analysis of seven dominant frameworks are described. As will be evident, not one can be considered as holistic.

Schön (1985:15) believes that well-formed problems result in meticulous practice in professional education and research. Real world problems, however, tend not to be well-formed; they are disorderly, indeterminate, and problematic. Usually the situations are characterised by uncertainty, complexity, and uniqueness demanding a framework that enables an integrated approach, understanding and response. For dealing with these problems, theories are needed to organise, explain, predict, and make sense of educational practice (Teymur, 2002:1). On the other hand, architectural education is full of mysterious and unarticulated assumptions which do not easily transfer to the creation of theory. Teymur believes that architectural practices, which has as its heart the studio, itself is the most appropriate model for architectural education. Teymur’s table however consists of factors only involved in

architectural education evaluation including objectives, objects, methods, and management (Teymur, 2002:7). Other frameworks include: that by Radcliffe et al. (2008:3) focusing on designing places of learning using pedagogy-space-technology parameters; the static framework by (Karakaya & Pekta, 2007:141) containing aims, content, and method as the main categories which are repeated in faculty’s subcategory; another by Chen and You (2003, p.4) containing four main components which, as a prototype, do not answer the basic questions of why and how. Although their proposal is very structured, the relationship between the main components is not clear. Dringus and Terrell (1999:60) have outlined a dynamic framework which does not incorporate directly the who and why questions. Their model is simple lacking representation of the relationships between key elements. MacDonald et al. (2001, p.19) have generated a diagram oriented towards learning outcomes where learning is considered as an individual rather than social act. Sagun et al. (2001:338) propose a modular system for the design of a web-based studio course. It focuses on web-based design education and cannot be considered comprehensive due to ignoring some essential factors like method and aim (how and why).

## II. TOWARDS A CONTEMPORARY HOLISTIC FRAMEWORK

From these existing frameworks and literature, a more comprehensive diagram can be proposed (Figure 1).

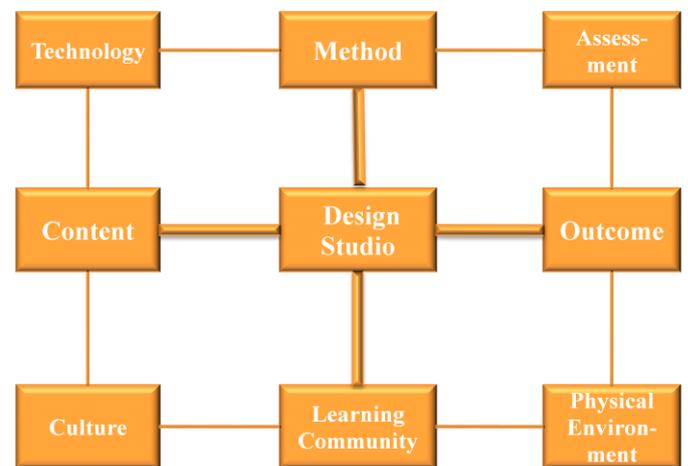


Figure 1: Essential factors and their relationships in relation to the design studio

In this diagram, each factor implies a category with the following features:

- Technology: media, presentation and ICT tools, delivery’s mode of knowledge, multimedia resources (texts, graphic, 3D model, video)
- Method: (how) pedagogy, process, approach, learning model, program, curriculum,

synchronous & asynchronous modes (time dimension)

- Assessment: evaluation, comment, correction, jury, critique
- Content: (what) materials, resources, course, module, information
- Design Studio: design studio education, learning environment
- Outcome: (why) objectives, aims, context, learning output, results, project proposals, knowledge gained
- Physical Environment: (where), physical, spatial, or virtual aspects, space's conditions, furniture and facilities to accommodate learning activities, setting
- Learning Community: (who) teachers, learners, and administrators, their roles, performance, motivation, feelings, experiences, skills and abilities
- Culture: different social environments, collaboration, interaction, communication.

In terms of relationships between elements, the following five types of arrangements are identified:

- i. In the first step, only the cross shape is considered which connects four main elements to the design studio education (method, content, learning community, outcome).
- ii. In the second step, four corners (technology, assessment, culture, and physical environment) are added to the primary cross shape.
- iii. The third pattern presents linear relationship between each group of three factors in a horizontal pattern. Each row is defined according to the middle cell: technology and assessment are determined based on desired method, content and outcome show the process of input to output in learning education, and finally culture and physical environment work comprise the social and building environment for learning community.
- iv. The fourth pattern refers to vertical groups of factors in which the first and third columns are affected by the second column.
- v. The last pattern forms four L shapes in the corners which demonstrate the effect of two related wings on each corner. For instance, technology is designed according to method and content [what and how]. As a result, the role of each factor can be understood by considering the situation of its adjacent cells.

### III. APPLICATION

Potential applications of the proposed framework will be justified in this section in relation to: the domain of application (design studio education in a changing world); research organisation; and the evaluation of existing and new learning environments enabling more effective prediction and planning.

#### *A. Domain of Application*

Course design is achieved through organising space, time, and activities considering appropriate methods and tools (Sagun et al., 2001:332-333). Furthermore, Chen and You (2003:7) claim that design education has different instruction strategies from other domains due to its own unique features. These features can be listed as:

- The field is combination of art and science
- A combination of both theory and practice
- Problem-solving or project process with creative thinking
- Team work and collaboration
- Multimedia resources and contents

In this respect, the framework outlined in the previous section appears able to accommodate these features. It can also accommodate web-based features enabling the integration of design concepts and skills and theoretical and practical knowledge. From the review to date, it appears that despite the development of ICT, online courses have not been informed by new learning methods (Karakaya & Pekta, 2007:145) necessitating a framework that is capable of contributing to conceptualizing and implementing virtual learning environments. As advocated in this paper and incorporated into the framework presented in this paper, frameworks should represent the fundamental aspects of education employment and development. They should define the complex nature of virtual learning environments. Furthermore, they should provide a basis for implementing, evaluating, planning, and designing virtual learning environments (Dringus & Terrell, 1999:55) including those utilising blended learning which for increased flexibility combines online education with live instruction in the classroom (Bender & Vredevoogd, 2006:117).

#### *B. Organizational Tool for Research*

Without a systematic method, it is impossible to organise, manage, analyse, and synthesise a study in a complex and interdisciplinary field like education. A framework is needed to facilitate this systematic process. Karakaya and Pekta (2007:138) argue that existing research on web-based education is merely a description of case studies, and conclude that systematic methods are needed to explain, analyse, and explore virtual studios. Moreover, the study of one factor (such as new technologies on education) should consider the impact on other aspects and factors as well.

#### *C. Comparative/Analytical Tool for New Setting*

Making a comparison between two settings is achievable through comparing their elements. Comparing two setting without comparing their elements is an incomplete inquiry. It is expected that these studies could explain the basic factors of studio design education and their relationships to respond to the needs of comparison, analysing, and evaluation of new settings. Therefore, any exhaustive research about comparing different modes of learning environment, and studio education specifically, should examine these categories.

#### D. Planning and Prediction

Given that change is inevitable, frameworks need to be developed that facilitate prediction and support planning. For instance, ICT has improved continuously and now offers new potential. As a result, sustained research is necessary to study the effect of the new technology in terms of addressing the problems in virtual design studio.

According to Schön (1985:4), architectural education must change due to changes in the world around it. Furthermore, Jamieson et al. (2000:225) explain that architectural education should prepare for tomorrow's conditions. In addition, they conclude that the purpose of the learning environment contains not only physical aspects, but also cultural and organizational features. Furthermore, it is necessary to study the impact of new learning approaches, such as virtual media in re-shaping the design studio. Lastly, it is argued that sustainable development can only be achieved through integration of all environmental, social, and economic aspects due to an interdisciplinary view of design process from the early stages (Ibrahim, Fruchter, & Sharif, 2007:89).

#### IV. CONCLUSION

This paper has outlined a framework for identifying issues that should be considered and organized within a comprehensive structure. It has highlighted key elements related to design studio education. These elements and their relationships have been defined and explained. The diagram is offered as a basic tool for use in making decisions about the evaluation, comparison, implementation and analysis of various learning environments for design education. It also offers a framework for guiding further research in learning environments, and design studios in particular. The framework is sufficiently flexible to enable “global perspective, local design” (Bonk, Kim, & Zeng, 2006) whereby aspects can be changed in response to local issues and the implications for its effects on other factors made apparent. Conflict experienced currently can in part be explained through the failure to consider the interconnectedness of elements in a learning situation and the impact that changing one element can have on other.

The significance of the proposed framework [Figure 1] is its generic identification of factors and their relationships enabling application to education settings including design studios in the contemporary world. It is expected that the result of this research will help architectural schools and professional communities to improve their learning environments that meet today's needs while at the same time having the potential to accommodate tomorrow's changes.

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