# Towards Implementing a Studio Culture Policy in the Department of Architecture of EMU – Students' Perspective in Understanding Studio Culture

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# ABSTRACT

In the design studio, a predominant learning format to teach design in architectural education, students develop certain ways of doing things when occupying its space with learning activities and interactions that are often referred to as studio culture. In the architectural design studios in the Department of Architecture of EMU, studio culture is the experienced habits and traditions with, assumingly, minimum explicit indication of what constitutes its prime notions.

Considering students' perspectives, the purpose of this study is an attempt to establish an understanding of studio culture within the architectural design studios of EMU and explore the possibility of using this understanding for future implementation of what is known as a studio culture policy within the department's current and future agenda for accreditation and international certification by organizations such as NAAB, MiAK…etc.

To achieve this purpose, the study relied on four synthesized parameters as a base to build up an understanding of studio culture, these are pedagogical perspectives and learning culture, informal interactions of the studio, the physical space of the studio, and the values embedded within the studio.

Taking these in mind, a Self-Administrated Questionnaire was used to collect and analyze data through exploratory and sequential mixed methods. From the data, studio culture in the architectural design studios of EMU was understood through twelve developed narratives that discussed these parameters and their interrelations and were situated, through documented considerations, within the process towards

implementing a studio policy in the Department of Architecture of EMU. The significance of this study comes from its bottom-up approach in understanding studio culture and its implementation of a studio policy. Heading up the process of the implementation with students' perspectives on studio culture might be a fortified base in the process of implementing a reliable studio culture policy for the department.

**Keywords:** Studio Culture Policy; Studio Culture; Architectural Design Studio; Educational Cultures

# ÖZ

Mimarlık eğitiminde tasarım eğitimi için baskın bir öğrenim formu olan tasarım stüdyosunda, öğrenciler genellikle stüdyo kültürü olarak adlandırılan öğrenme etkinlikleri ve etkileşimleri ile stüdyo mekanını işgal ederken bir şeyler yapmanın belirli yollarını geliştirirler. DAÜ Mimarlık Bölümü'ndeki mimari tasarım stüdyolarında, stüdyo kültürü, temel kavramlarını neyin oluşturduğuna dair net göstergeler olmadan, deneyimlenen alışkanlıklar ve geleneklerin bütünüdür.

Öğrencilerin bakış açısını dikkate alarak, bu çalışmanın amacı, DAÜ mimari tasarım stüdyolarında stüdyo kültürü anlayışı oluşturmaya çalışmak ve bu anlayışın bölüm bünyesinde stüdyo kültürü politikasının yazılı hale gelmesi ile mevcut ve gelecekteki NAAB, MiAK…vb. gibi kuruluşlar tarafından akreditasyon ve uluslararası sertifikasyon için yol haritası oluşturmaktır.

Bu amaca ulaşmak için, çalışma bir stüdyo kültürü anlayışını oluşturan dört temel parametreyi içermektedir. Bunlar; pedagojik bakış açıları ve öğrenme kültürü, stüdyonun informel etkileşimleri, stüdyonun fiziksel alanı ve içerdiği değerler bütünüdür.

Bunları göz önünde bulundurarak, araştırma ve ardışık karma yöntemlerle veri toplamak ve analiz etmek için bir anket kullanılmıştır. Verilerden, DAÜ'nün mimari tasarım stüdyolarındaki stüdyo kültürü, bu parametreleri ve aralarındaki ilişkileri tartışan on iki gelişmiş anlatı aracılığıyla belirlenmiş ve DAÜ Mimarlık Bölümü'nde bir stüdyo politikasının uygulanmasına yönelik süreç içinde bir yol haritası önerilmiştir.

Bu çalışmanın önemi, stüdyo kültürünü anlamadaki aşağıdan yukarıya yaklaşımından ve buna bağlı bir stüdyo politikasının oluşturulmasının önerilmesidir. Uygulama sürecini öğrencilerin stüdyo kültürüne bakış açısıyla yönlendirmek, bölüm için güvenilir bir stüdyo kültürü politikası uygulama sürecinde sağlam bir temel olabilir.

**Anahtar Kelimeler**: Stüdyo Kültürü Politikası; Stüdyo Kültürü; Mimari Tasarım Stüdyosu; Eğitim Kültürleri

# ACKNOWLEDGMENT

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# LIST OF ABBREVIATIONS

ACSA            Association of Collegiate Schools of Architecture

AIA             American Institute of Architects

AIAS            American Institute of Architecture Students

AMOS            Analysis of Moment Structures

CFA             Confirmatory Factor Analysis

CoP             Communities of Practice

DoA             Department of Architecture

EMU             Eastern Mediterranean University

METU            Middle East Technical University

MiAK            Architecture Accreditation Board (Mimarlık Akreditasyon

                Kurulu)

NAAB            National Architectural Accrediting Board

NCARB           National Council of Architectural Registration Boards

PBL             Problem-Based Learning

RIBA            Royal Institute of British Architects

SAQ             Self-Administrated Questionnaire

SEM             Structural Equation Modeling

SPSS            Statistical Package for the Social Sciences

YTU             Yıldız Technical University

# Chapter 1

# INTRODUCTION

Architectural education institutions have been, in most cases, distinguished in respect to specific forms of education, such as those in humanitarian and scientific disciplines. (Cross, 1990; Teymur, 2001) Like any other design-related education, architectural education relied on certain spaces that were designed to provide a unique educational environment that not only serves pedagogical purposes of educating future architects but also serves cultural dimensions with often unarticulated aims and methods. (Crowther, 2013)

What is known as the design studio was and still, in all its derivatives and forms, a dominant teaching format of design and design-related prospects in several and diverse architectural programs. (Quayle, 1985; Stevens, 1998; Mostafa & Mostafa, 2010) In the design studio, students develop a sort of a learning culture and a set of values, norms, traditions, and ways of doing things by occupying the space of the studio with activities and interactions. (Anthony,1991; Force, Koch, et.al, 2002; Webster, 2007)

How these learning cultures are addressed can be manifested in two scenarios. In one, several schools of architecture see these learning cultures as byproducts of the experiences, traditions, and unstated habits of the studio's practices. For example, in the case of the architectural program in EMU, studio culture is the experienced and enacted traditions, habits, and ways of doing things in the studio with, assumingly, a

minimum explicit indication of its parameters. On another, many schools of architecture and its programs, with the accreditation and validation of several organizations such as NAAB, RIBA, MiAK…etc., attempted to explicitly articulate these learning/studio cultures and what is expected of students and instructors in terms of behaviors, norms or values in the studio in the form of a formal document known as a studio culture policy.

The implementation of this kind of document is relatively a new phenomenon that started to be discussed within the early 2000s, roughly within the main agenda of the AIAS report of the studio task force in 2002. (See Force, Koch, et.al, 2002) By definition, studio culture policy is a formal document to be presented as part of the conditions of accreditation provided by NAAB describing in its lines a sort of an understanding of the values, practices, and ways of doing things in its learning environments. In other words, studio culture policies are formal documentation that represents the studio/learning culture of that educational program which reflect all its unspoken practices, values, patterns, and experiences that all those involved in the educational process (students, instructors…etc.) might expect when indulged in these learning environments.

## 1.1 Problem statements

As the DoA of EMU initiates its international certification within NAAB, addressing the implementation of a studio policy might be considered a fortifying element in the process of its accreditation. For this purpose, the problem in place can be assumed in the following directions.

First, the design studio culture, in the case of architectural design studios in the DoA of EMU, is still, in most cases, a byproduct to the interactions of the studio model, with a slight explicit awareness of its parameters by the educational participants (students, instructors or external professionals) of the design studio.

Second, the resulted review of several studio culture policies of several accredited schools of architecture in the second task force report (AIAS, 2008) and the article published by AIAS in 2019 (See Russell & Cornelius, 2019) demonstrated the issue of addressing the students' perspective in the studio culture policies provided. While studio culture policies are, in most cases, a matter addressed by the faculty with students' participation through representative groups, the article clearly stated that "it is important for students to head up the process" (Russell & Cornelius, 2019).

## 1.2 Main aims and objectives

The main aim of this research is to attempt to accomplish the following:

- To provide an understanding of design studio culture and its parameters from the students' perspective within the architectural design studios in the DoA of EMU.
- To explore the possibility of addressing the developed understanding of studio culture within the process of implementing a studio culture policy for the consideration of future national and international accreditation, validation, and certification, such as NAAB, for the DoA of EMU.

Thus, to achieve these aims, the following objectives are to be considered:

- Review several studio culture policies of some of the accredited schools of architecture in the US and across Europe to observe common and underlying

parameters within its studio cultures and direct these emerged parameters as guidelines in understanding the students' perspective of studio culture of the architectural studios of EMU.

- Explore the emerged parameters through the literature with extended examples to show its relevance to the definition and understanding of studio culture in general.

- Attempt to develop an understanding of the studio culture within the DoA of EMU by taking the students' perspective with the use of a SAQ.

- To explore how this developed understanding of studio culture might be addressed in the form of a studio policy in the architectural design studios in the DoA of EMU.

## 1.3 Research questions

The main questions to be answered in the completion of this research are:

- From students' perspective, what are the narratives that provide an understanding of studio culture within the architectural design studios in the DoA of EMU?

- How the developed understanding of studio culture can be used within the process of implementing a studio culture policy for future national and international accreditation, validation, and certification, such as NAAB, for the DoA of EMU?

## 1.4 Methodology

The research will take a constructivist view on studio culture with exploratory and sequential mixed methods. (Creswell & Creswell, 2017) The research relied on a base of identifying major parameters in defining design studio culture out of reviewing several studio culture policies of some of the accredited schools of architecture in the

US and across Europe to observe common parameters within its understanding of studio culture. Since the architectural program in the DoA of EMU is recognized for satisfying learning outcomes and competencies of both European and North American education systems and its stand on national and international certification and validation, the randomly selected school, within this review, might provide a sensible base for this study. (See chapter 3.3 for more elaboration on this review)

On one hand, these major parameters are supported for their relevance, importance, and application through the literature review which includes books, articles, papers, reports, or journals in architectural education and design studio culture. In addition, within the literature, several other schools of architecture are also mentioned, as exemplary applications, for their interpretation of the emerged parameters.

On the other hand, the emerged parameters are used as guidelines to design a SAQ directed to question the emerged parameters in the case of the architectural design studios in the DoA of EMU. Participants for this study were chosen based on their architectural design studio courses level (Refer to chapter 4.2.1. for the Sample size and description). Since the parameters of the studio culture are based on embedded and approved experiences, traditions, and values, the research will use mixed methods for the design and analysis of the SAQ and the collected data.

From a quantitative point of view, a Likert scale is used due to the scales' nature to measure experiences and traditions objectively and convert them to measured data and qualitative narratives that can be compared, organized, and understood accordingly (Bertram, 2007). The use of this quantitative approach is to measure the direction or

the level of consensus of the students on the proposed parameters within the studio's learning experience (Trice & Beyer, 1984; Cooke & Rousseau, 1988).

For the analysis, the Likert scale questions will be uploaded and organized using SPSS 26 software. For these data, frequencies, descriptive statistics, and statistical non-parametric tests such as the Mann-Whitney U, and the Kruskal-Wallis H tests will be used to evaluate the results and find and compare any statistically significant data among the results obtained.

From a qualitative point of view, the questionnaire will include questions with open-ended responses that will allow participants to reflect on their experiences and behaviors in a more elaborate manner. These questions will be analyzed through qualitative thematic analysis methods using indexing (Löfgren, 2013).
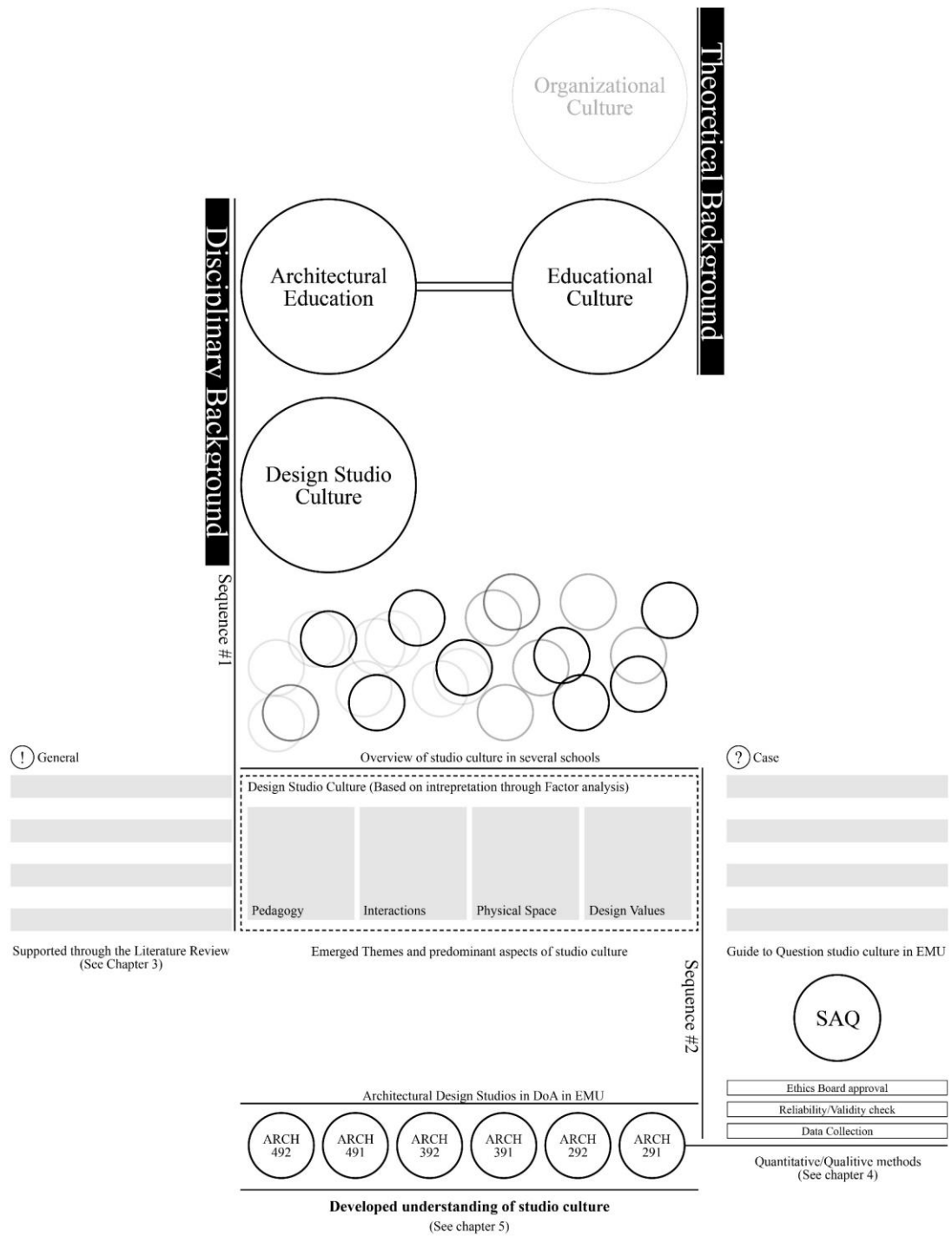
Figure 1.1: (by author) Methodology Used to Develop an Understanding of Design Studio Culture in DoA of EMU

## 1.5 Limitations

In anthropology, through Ortner (1984) and Borowsky (1994), culture has yet to attain a definite or fixed meaning or explanation. The concept is widely expanded that a

theoretical limitation might be needed for this research. So, the investigation will focus on a derivation of culture that is referred to as organizational culture that is often regarded within the larger scheme of occupational culture or culture through occupation (Johnson, et.al, 2009).

Indeed, organizational culture, as a product of occupational culture, is concerned with, as an example but not limited to, the beliefs, norms, symbols, stories, experiences, and values that influence the way individuals behave, act, think and feel within a certain organization which they occupy such as companies, schools, institutions and facilities (Alvesson, 2012; Efeoglu & Ulum, 2017). For this research, organizational culture will be limited to educational cultures and, in further limitation, learning cultures in higher education and undergraduate studies.

Although the concept of studio culture might be defined similarly within the literature, each school or program in architecture has a different interpretation of studio culture and different ways to address it.

To provide predominant parameters in defining and understanding design studio culture, several and selected schools of architecture were taken into consideration. The selected schools cover different regions in Europe and United States and are selected for their quality in education and their impact, through their long history, in the discourse of architectural education (Refer to chapter 3.3).
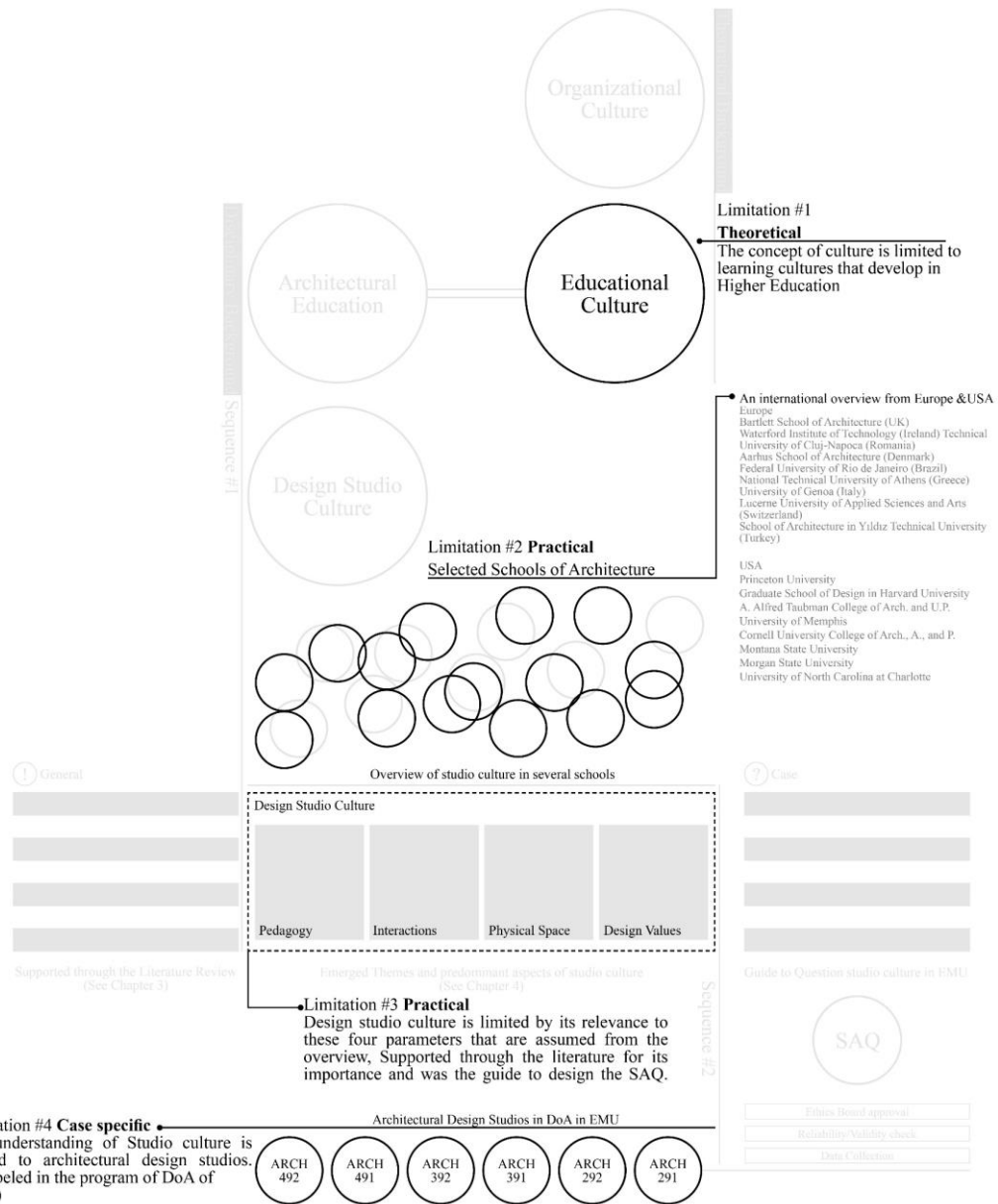
Figure 1.2: (by author) Limitation Specified within the Methodology of the Research

Further, understanding design studio culture is limited, within this research, to the students' perspective on studio culture in architectural design studios in the DoA of EMU.

From such goal, the sampling size considered for this study is limited to architectural students in their second, third, and fourth year in the program that are inculcated in studios (ARCH291-292, ARCH391-392, and ARCH491-492) with the exclusion of

first-year students in studios (FARC101- Basic Design Studio FARC101 and FARC113 Introduction to Design)[1]. This sampling limitation came as a result of:

- The research is limited to architectural students in their architectural design studios. In the architectural program in the DoA, first-year studios are offered to interior architecture and architecture students combined.

- First-year students are, to an extent, considered novices into the practices of the studio. (Lawson, 2006; Goldschmidt, Hochman & Dafni, 2010) Thus, they may not have yet possessed a comprehensive understanding of the studio's learning experience as they are still exploring its potential and opportunities.

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[1] Please refer to the architectural program as summarized in chapter 4 for the whole list of courses in the architectural program of DoA of EMU, its year levels and its brief aims and objectives.

# Chapter 2

# GENERAL OVERVIEW ON EDUCATIONAL CULTURES

## 2.1 The context of higher education

In *Democracy and Education* in 1966, John Dewey noted the similarities between the structure of any educational setting and the structure of a society. In any society, the social patterns, behaviors, and occupations of its members, over time and extended history, manifest a form of an abstraction known as culture. Culture, in this abstract sense, might be referential to the society's believes, symbols, and values and influential on the way individuals act, feel and make decisions within these societies.

In a sense, higher education, like any form of education, has long been assumed as a society that, took in its most common missions, the continuation, and accumulation of values, beliefs, and knowledge of certain trades from those individuals who acquired it to those who are eager and have the desire to acquire it.

However, since its institutionalization in formal organizations such as schools, universities…etc., higher education actions have been observed among three educational models (See figure 2.1). These educational models are:
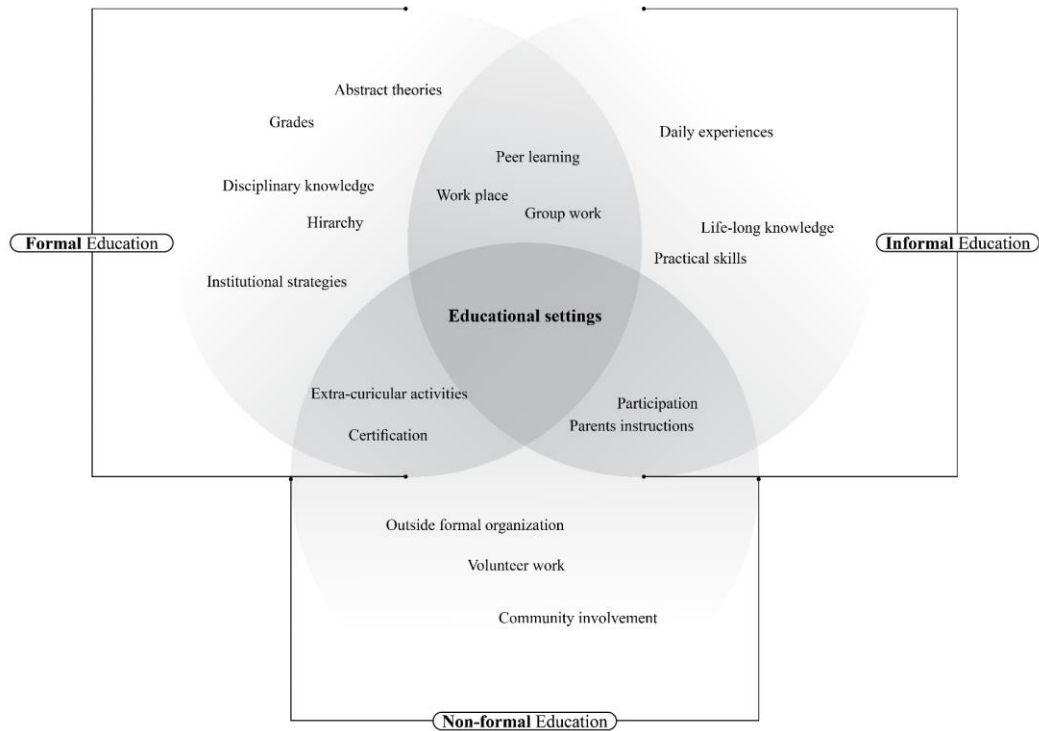
Figure 2.1: The Intersection of Educational Models in any Educational Setting, with Examples in each Intersection (Adapted from La Belle, 1982, p.162)

- Formal education, assumingly defined, is an institutionalized and a hierarchal form of education that instructs its learners with suitable disciplinary knowledge (Coombs & Ahmed, 1974). Further, it was Dib (1988) who defined it as an organized and structured education governed by a set of laws and instructions determined by educators and institutions that reflect a firm curriculum in terms of the content and one-directional and instructional pedagogical methods.

- Informal education or often known in other indications such as life-long education, experiential or accidental education (Coombs & Ahmed, 1974; Boud, et. al,1985; Bjørnåvold & Tissot, 2000), minimally guided education (Kirschner, et.al, 2006) and discovery-based education (Bruner, 1961; Anthony, 1973).

- Non-formal education that is concerned with sort of optional educational activities that are additional, or in most cases, supportive or assistive to the previous educational models (La Belle, 1982; Dalrymple & Evangelou, 2006). Examples of such models include workshops, training, extracurricular activities…etc.

It should be noted that these models of education do not exist in separation nor have definite boundaries (La Belle, 1982). In reality, these models exist in parallel and could easily be crossed and intersected. Also, another notion to be considered, concerning these models, is the paradigm alteration which was mostly centered in American higher education[2] (Barr & Tagg, 1995). The alteration was concerned to shift the aim of higher education from providing disciplinary instructions to producing "learning" environments with more process-oriented approaches. Table 2.1 shows a generic comparison between the instructional paradigm and the learning paradigm in higher education.

Table 2.1: (by author) Comparison Between the Instructional Paradigm and the Learning Paradigm in Higher Education (Barr & Tagg, 1995).

| Compared by | Instructional Paradigm | Learning Paradigm |
| --- | --- | --- |
| **Boundaries** | A pre-planned and specified methodology of what can be done. | The student's process of learning and its measurements of success. |
| **Mission of institute** | Provide instructions with a focus on the product of education. (Methods = Product) | Produce learning with a focus on the process. (Methods ≠ Product) |
| **The aim of the institute** | -One directional knowledge transfer from teachers to students | -Knowledge construction in created learning environments |

[2] This educational scene in higher education, in 1970's America, was based on the concept known as *for-profit universities* (Ford, 2017, p.560). Assumingly at that time, one of the dominant aims of any higher education was economic growth and individual's placement in the capitalist system.

| | -Offer courses and degrees that provide "quality instructions" and keep it updated with the field's changes and demands | -The student is part of a "learning community" |
| | | -Success in learning is important. (Professional, social and personal competency). |
| | -The student is part of the survival and growth of the field | |
| | -Access to education is important | |

As noted in the table, the learning paradigm does not eliminate the effectiveness of instructions and the use of direct methods in teaching. The two depend on each other and might equally co-exist in higher education programs or institutions. Thus, the comparison demonstrates a more holistic view of programs in higher education and an overview of the dual nature of the learning practices that are implemented in higher education.

### 2.1.1 Learning practices in higher education

Several learning practices exist, intersect, or even overlap in commonality and contradiction in any higher education setting. Although such learning practices may be in a great spectrum of differences and similarities, several underlying key concepts that govern these practices have been discoursed within the literature. (Barr & Tagg, 1995; Bransford, Brown & Cocking, 1999; Biggs & Tang, 2003; Jenert, 2011)

The first concept describes a form of an outcome-oriented approach that is concerned with the outcomes and the results of the learning practices. Turning the focus of the educational learning practices in the direction of the outcomes had several educational programs look into the professional field and the labor market, both in and outside academia, to choose the suitable education and learning practices needed in the program.

This presumes a capitalist view on educational activities and learning practices (See Crysler, 1995; Marginson, 2013; Ford, 2017), with the mission to provide students with the necessary knowledge, values, or beliefs that reflect the larger economical surroundings and its demanding preferences.

In addition, the outcome-oriented approach validated numerous competencies and skills that exist both in the formal educational model and in the external workplace (Bjørnåvold, 2000). This may affect students' perception of competency and what may be deemed essential to educational and professional growth and development.

Another way to look into the learning practices of higher education is through a competency-directed approach. Instead of validating forms of competency from external or internal references of the educational institute and reflecting it into the learning practices, students should be able to develop their own professional and personal competencies (Bransford, Brown & Cocking, 1999; Jenert, 2011). This development would encourage students to adapt, grow and develop their knowledge, skills, or attitudes in dealing with the proposed learning situation.

The last concept, taken from the students' perspective, is the student-centered approach in learning practices (Jenert, 2011). In this concept, the student is given the capacity to understand the educational program, its courses, and its expected outcomes. The student may even be allowed to explore or provided the option to explore different learning practices and methods by different teachers or courses.

Assumingly, this type of approach places a higher responsibility on students as dynamic, self-assumed, and life-long learners that take control of their learning

progression and choose the type of competencies, skills, forms of knowledge, or attitudes they want to acquire during their learning.
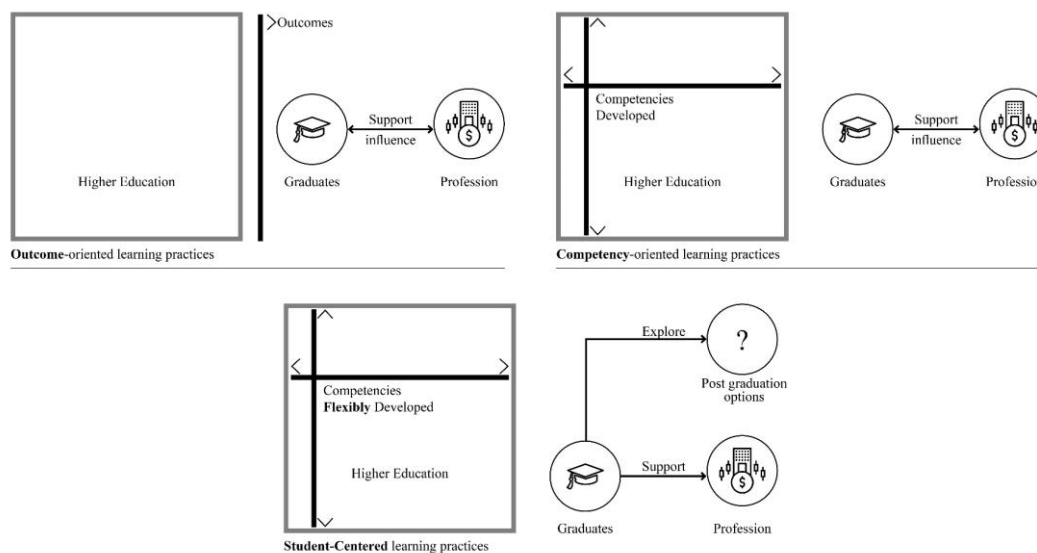


Figure 2.2: (by author) Key Concepts Underlying Learning Practices in Higher Education Institutes (Barr & Tagg, 1995; Bransford, Brown & Cocking, 1999; Biggs & Tang, 2003; Jenert, 2011)

Overall, regarding these concepts, two main notes are worth mentioning, these are:

- These concepts are not selective nor exclusive on their own, these practices may even co-exist in the same department/program (Jenert, 2011).

- Barr and Tagg (1995) described these concepts as indicative of two main models in higher education institutes: teaching and learning. Further, they insisted on the necessity to shift from the one-directional and capitalist teaching practices to more adaptive learning practices that take into consideration the student's prior, current, and planned aspirations in learning.

### 2.1.2 Problem-Based Learning (PBL) in higher education

The shift to the learning paradigm has opened multiple possibilities for the design and plan of the learning environment in the programs of higher education. In the late 1960s at McMaster University in Ontario, a small group of medical students enrolled in the

newly proposed medical curriculum. This curriculum was different from earlier approaches and considered the learning process through a unique "problem-based" proposition, or what is formally known as Problem-Based Learning or PBL (Schmidt, et.al, 2009).

On one side, PBL was braised for its contextuality, its collaborative encouragement within the learning experience, and its student-centeredness. On the other side, and later in its development, Colliver (2000) assumed that PBL is less effective in building higher levels of knowledge in the learning environment. Some even described its minimal guidance and instructional approaches as the less-efficient version of the instructional paradigm (Klahr & Nigam, 2004; Sweller, Kirschner & Clark, 2007).

Yet, to understand PBL and its approach in learning in higher education, Barrows (1985), Evensen, et.al (2000), Schmidt (1993), and Schmidt, Van der Molen, et.al (2009) agreed to mention major significant characteristics of PBL. These characteristics included:

- Problems and problematic situations are considered the main element that regulate, dominate and control the learning process.
- Collaborative group methods and discussions are preferred in any PBL environment.
- Since the problems usually guide the learning experience, tutors must be flexible and adaptive in their guidance within the learning process. Here, guidance rather than confirmation plays a major role in PBL.
- Usually, in PBL, direct instructional approaches (for example lectures) are minimized to an extent. This allows learners more free time and focuses on the problematic situations addressed in the learning environments.

In addition, Brown, Collins & Duguid (1989) clarified the process that is usually embedded in any PBL. First, the learning environment may begin with a "relatable" activity or a problem. By relatable, it means that the learners (students) already possess a level of comprehension of this activity and, somehow, correlate to their prior knowledge.

Next, each learner may interpret and approach the problematic situation differently, this may ensure exploration and flexible problem-solving approaches. It releases learners from the constraints of absolute theories and rigid approaches to learning environments where there is no "right" or "direct" approach to learning, but rather less or more effective approaches to the problematic situation (See also Lampert, 1986).

In the end, as a result, this creates a learning environment that celebrates adaptability, means of discussions, exploration, and reflectivity that would help them be more connected and involved with the traditions, practices, and values of the field they are being educated into.

Thus, using activities already familiar to learners to reach well-developed principals, procedures, and values of the educated field is one of the main strengths of using PBL in higher education. Figure 2.3 is an adaptation of the figure proposed by Brown, Collins & Duguid (1989, p.40) showing the gradation from relatable activities into learned principals, values, and attitudes within the educated field.
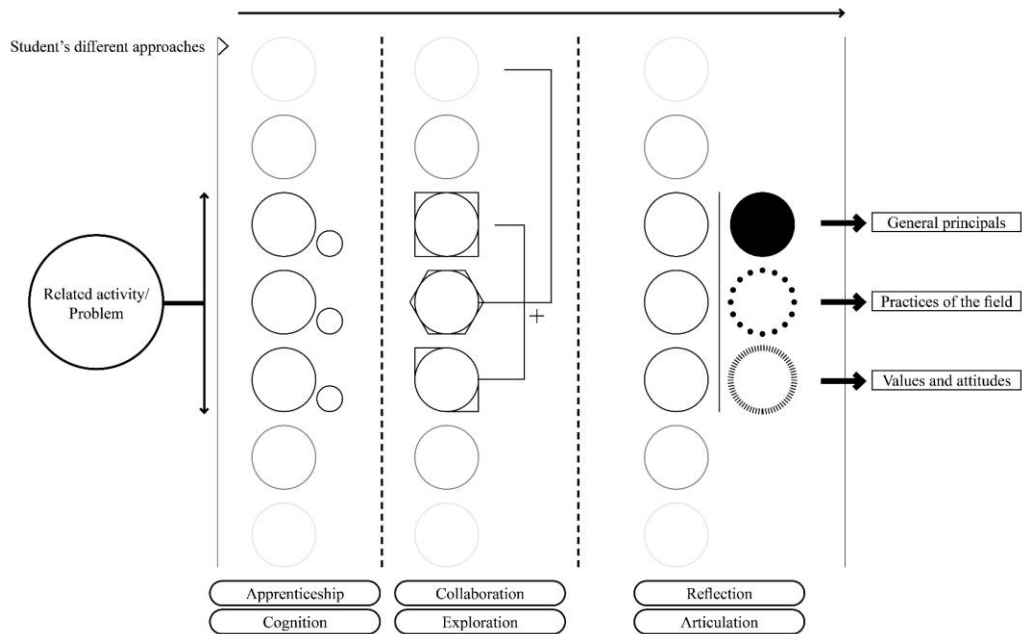
Figure 2.3: The Gradation from Relatable Problems and Activities to Learned Principles and Values in PBL (Adapted from Brown, Collins & Duguid (1989, p.40))

To further understand PBL and its learning possibilities, an interesting understanding might be essential to mention that may provide a backbone to teaching in PBL in higher education. As a derivative of a craft apprenticeship, *Cognitive Apprenticeship* had many possibilities and potentials in PBL experiences, and more profoundly, in the strategies and methods of dealing with the problematic situations proposed. The possibilities of considering a cognitive apprenticeship in PBL included (Brown, Collins & Duguid, 1989; Brown, Collins & Holum, 1991; Van Dooren, Van Dorst, et.al, 2019):

- The integration between learning and cognition[3], more precisely, learning with the tactic and unexposed cognitive abilities of the more competent individuals.

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[3] The integration of learning and cognition is a wider understanding that takes an epistemological view on situated cognition. As noticed in its exploration by Brown, Collins & Duguid (1989), much future work is needed on how such integration may, not only benefit Problem-based learning in higher education but to be effectively addressed in educational practices. Moreover, more attention may address its contribution to what is implicitly learnt in comparison to what is explicitly taught.

In the case of higher education, it includes teachers, instructors, or professionals.

- The use of the context of learning and its social and physical boundaries and limitations into the problematic situations proposed. This includes the physical space of the classroom or the socialization of students in the main hall of the institute among many more.

- A learning experience that directs its focus on "knowing how", in comparison to "knowing what". Thus, it is not enough to focus on what is learned but add to the formula, how it is acquired, perceived, learned by students, and, more importantly, how it is used in the problematic situations assumed in the learning environments of PBL.

- The use of many teaching attributes such as coaching, reflection, exploration, or role-modeling among many others.

The model of Problem-Based learning can be seen in many educational fields such as medicine, mathematics, law, and architecture. To illustrate, table 2.2 demonstrates some notable examples and the use of PBL in its learning methods.

Table 2.2: (by author) Examples of Educational Model in Higher Education and how it Approached PBL

| Educational Model | Methods in PBL | Educational field |
|---|---|---|
| **Lampert model in teaching multiplication** <br><br> **(Lampert, 1986)** | -The use of relatable assignments (Coin problems) to ensure implicit understanding of the problem <br><br> - Create stories of these activities in solving the problems to explore the problem in various approaches (no right way of solving the problem) <br><br> - Principals underlying the multiplication solutions can be addressed with a clear meaning | Mathematics |

| | | |
|---|---|---|
| **Schoenfeld problem solving model (Schoenfeld, 1987)** | - Generate mathematical practices.<br><br>- Think mathematically<br><br>- How to use "mathematical tools" in active participation rather than instructional declaration | Mathematics |
| **Vocabulary teaching**<br><br>**(Miller & Glidea, 1987)** | -Knowing and doing are separate<br><br>-Teaching methods should not ignore the cognitive way of receiving "situations"<br><br>-Learning languages in the context of communication rather than direct abstractions in dictionaries<br><br>-Language's nature depends on context (metaphors, ambiguity, accents…etc.) | Languages |
| **Reflective Practitioner**<br><br>**(Schön, 1983/1987)** | -Studio-based projects that simulated real-life context<br><br>-Reflection in/on the actions and processes in these projects with the coaching of their expert teachers. (See Webster, 2008) | Architecture |
| **The advanced[4] Case model** | -The use of *case knowledge* as the knowledge from documented events or series of events<br><br>-These cases include (Shulman, 1986):<br><br>Prototypes (theoretical cases)<br><br>Precedents (Practical cases)<br><br>Parables (Cases with values and norms) | Legal Education |

## 2.2 Learning cultures in higher education

### 2.2.1 A behaviorist view on learning cultures

Cultures, in their basic definition, may be an indication of behavior and may even be assumed as learned behavior[5]. One support of such assumption can be found in

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[4] The advancement of such model in Law and legal education can be traced back to Christopher Columbus Langdell, the dean of Law school in Harvard University at that time (1870-1895)

[5] The discussion which assumed culture as an abstracted indication of behavior can be seen earlier than that in the late 1950's in the work of Leslie A. White in *The concept of culture*. (See White, 1959)

Shepard's (2000) correlation amongst learning cultures, cultures developed in educational and learning settings, and behaviorist learning theories.

The core basis of behaviorist learning theories was the human's observable behaviors and actions in learning settings. The early works of Skinner (1990), or his well-known concept of *Skinner box*, and John Watson (1958), and his work on *classical conditioning*, are considered paramount in behaviorism and its association with learning (Parkay & Hass, 2000; Zhou & Brown, 2015). To briefly clarify, Skinner's box was assumed as a tool that relied on the punished or rewarded behaviors. In his claims, Skinner assumed that whether a behavior is repeated or not depends on the reward or punishment associated with it.

On the other hand, Classical conditioning, as based on the works of John Watson and Ivan Pavlov (1849-1936), referred to learning opportunities that occur when a non-related stimulus becomes related to a stimulus that produces behavior. The emphasis on stimulus and its effect on behavior was key in their works on behaviorist learning theories.

Skinner even related his work to Watson's in developing another interpretation of conditioning, known as *operant conditioning*. When a stimulus results in a learning response, it is sustained or eliminated in the learning setting based on its conditioned reward or punishment.
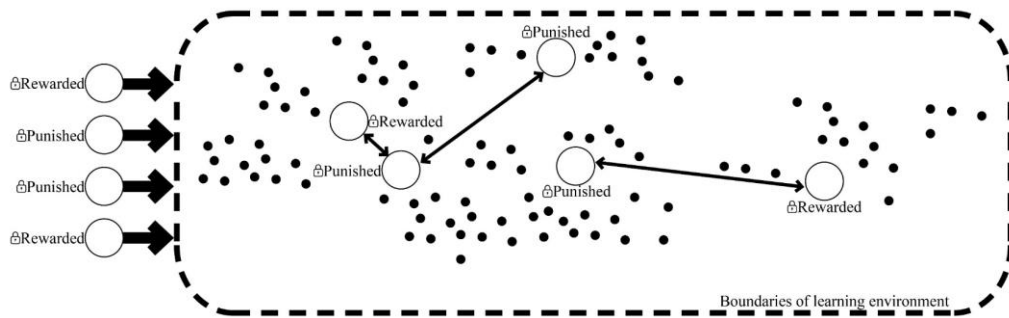
Figure 2.4: (by author) Behaviorist View on the Formation and Development of
Learning Cultures

The behaviorist view on learning might indicate the following parameters that would
affect its learning culture (See figure 2.4), these include (Zhou & Brown, 2015):

- *The inputs of learning or the stimuli that are embedded in the learning process.*
  This may also include the two forms of stimuli: [1] the formal form as initiated
  and planned through instructional means or [2] the informal stimuli that may
  happen randomly and accidentally in the learning environment. An example of
  these might be when students are stimulated or influenced by their teacher's
  behaviors or actions to perform a certain action or behavior in the classroom.

- *The growth and sustainment of these stimuli.* In another sense, for these stimuli
  to be persistent in the learning environment and not just considered as random
  reactions, a persistent conditional system of rewards and punishments might
  associate with these stimuli.

As a result, these, assumed, behavioral modifiers lead to learned, approved, and
disapproved behaviors in the learning environment. Thus, learners and teachers, at this
point, start to develop appropriate "ways of doing things" that are either confirmed or
validated within the learning setting.

Thus, the behaviorist explanation of how learning occurs indicates, in a sense, how learning cultures are formed and defined. From such a view, learning cultures can be conceptualized as the hidden forces or agendas (stimulus, teaching behaviors, student's responses…etc.) that are affirmed, through the period of learning, in measures of rewards and punishments.

### 2.2.2 Dimensions of learning cultures

Other ways to interpret the concept of learning cultures may further step beyond the behaviorist's view on the construct described earlier. For instance, an understanding of learning culture can be based on a more holistic and systematic view on learning development in higher education that shadows the entire institute in dealing with educational change. This understanding does not start and end in a classroom or a lecture hall, but it broadens its boundaries to the educational organization as a whole. (Reigeluth & Garfinkle, 1994; Collis & van der Wende, 2002; Boyce, 2003; Scott, 2003)

As this view may seem broader in its angle and, in some cases such as large institutions, may seem overwhelming, three overlapping dimensions can be mentioned regardless of this wider view on learning culture. These dimensions include the personal dimension, the pedagogical dimension, and the organizational dimension. (Jenert, Zellweger, et.al, 2009; Jenert, 2011)

First of all, the personal dimension explains the individualistic features of the educational participants (students, teachers…etc.). It considers their cognitive capabilities, their developed and developing skills and competencies, and their attitudes and motifs within the learning process. In most cases in higher education,

these dimensions, as it is labeled, are personal and invisible in the learning environment. Yet, their consequences can be roughly extracted and pointed out.

The personal dimensions are the result of two sources. Although the two may seem continuous and segmental, in reality, it is probably hard to differentiate each one separately. According to Jenert (2011), these sources might be summarized in the following:

- *Student's prior learning experiences and developed competencies*. In the case of higher education, it is the result of their primary and secondary education. Further, this is most crucial in the early stages of higher education, mostly in the first or the second years of their learning programs.
- *Product of their learning experiences in higher education institutes*. This indicates higher levels in the learning program, after spending a few years in the institute.

Secondly, the pedagogical dimension explores planned learning interactions and educational scenarios that are either intended by teachers or by the institute's own designed program. Here, in the pedagogical dimension of learning cultures, two opposing and depending sides play a major role in the learning culture.

On one side, the pedagogical dimension places the teacher as the side with a vision for the learning environment. This may include learning objectives and aims, pedagogical methods to be used, and the suitable media used in the learning environment. On the other side, students are assumed as the individuals who will transform the teacher's vision of the learning environment into a reality. In this case, students interpret the

tasks proposed, react to the learning methods and use whatever the learning environment has to offer to accumulate learning.

The last dimension of learning cultures is concerned with the position of learning in the higher education institution rather than the isolated classroom. The organizational dimension deals with the strategic planning and decision-making of the institution towards educational planning and management. Such dimensions might include, for example, the institution's accreditation in international and local organizations and the quality of its education, approaches for educational development, and curriculum planning and design that reflect mandatory, optional, and additional courses to be addressed in these institutions.

Table 2.3 is an adaptation of the indicators, mentioned by Jenert, Zellweger, et.al (2009), that may point out these dimensions in the learning environments of higher education.

Table 2.3: (by author) The Dimensions of Learning Cultures and their Indicators in Higher Education (Jenert, Zellweger, et.al, 2009).

| Dimensions of learning cultures | Indicator in the learning experience |
| --- | --- |
| Personal dimension | -Attitudes (motivation towards learning, learning reactions, and accountability for learning.) <br><br> -Knowledge and skills |
| Pedagogical dimension | -Objectives and aims <br><br> -Tasks proposed, methods used, and the teacher's role <br><br> -Interactions between student and teacher <br><br> -Learning atmosphere and resources provided for learning. |
| Organizational dimension | -Quality of learning and teaching <br><br> -Planning of the educational program (extracurricular activities, informal learning, and student-faculty interactions). |

| | -Organizational development |
|---|---|

As it may be noticed, these dimensions are pyramidical, with the most inclusive dimension, the organizational dimension dominating the base of the pyramid and the personal dimension holding a place at the peak of the pyramid.

Indeed, in higher education institutions, the progression of influence in learning cultures transitions from the organizational dimensions to the pedagogical to the personal dimensions of students. Figure 2.5 displays the relationship between these dimensions and the formation of learning cultures in higher education institutions.
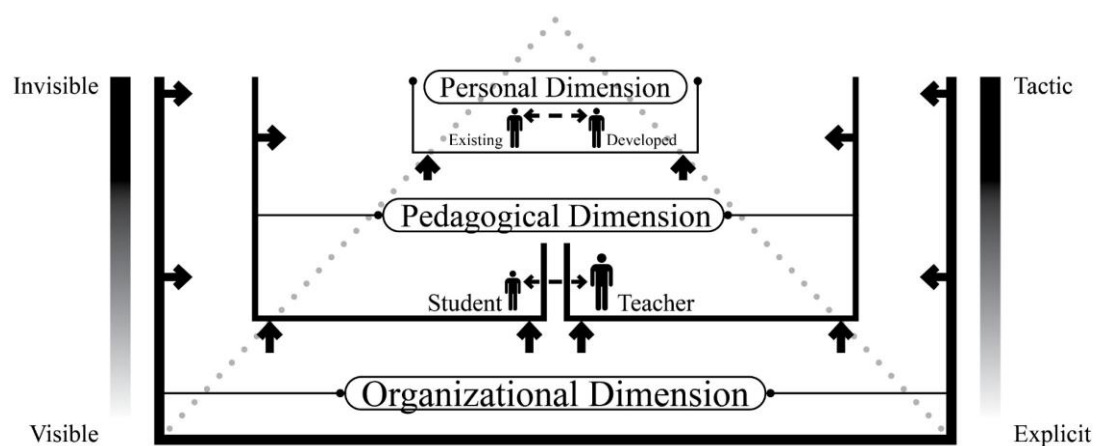


Figure 2.5: (by author) The Overlapping Dimensions of Learning Cultures in Higher Education Institutions

### 2.2.3 Definitions of learning cultures in higher education

In an attempt to allocate and define learning cultures in higher education, two sides of any educational curriculum[6] may be noticed. On one side, there is the official and formal curriculum represented in mandatory courses to acquire abstracts and theories

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[6] The educational curriculums, included in Muller's 2012 classification, included primary, secondary and post-secondary (higher) education. Thus, it took an inclusive overview of education.

(Muller, 2012). Mostly, this side of the curriculum is delivered through formal lecture-based formats, the teacher provides the required inputs, such as concepts, facts, materials, contents, or representations among many others, that the student must be aware of upon the completion of their educational program (Sfard, 1998).

On the other side, there is the often "hidden curriculum"[7] represented in what students tag along from values, norms, or knowledge as they pass on their educational journey. (Margolis, 2001) The emphasis on the educational process was even indicated in Young's (1976) labeling as "curriculum as process".

Instead of delivering knowledge, as ready-to-use commodities, knowledge is socially constructed in interactions and being in the social scene of the learning environment. In another sense, the student has to be in the classroom, knowledge is constructed and not delivered in the classroom, and interactions between students and teachers play a vital role in this knowledge construction.

The most informal curriculum has been supported in different learning theories. For example, in the cultural theory of learning, Vygotsky (1978) saw the process of learning as the development of intelligence through social processes. Indeed, for Vygotsky, "the most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence,

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[7] The concept of the hidden curriculum was viewed in a neo-Marxist view to educational practice, as the new "sociology of knowledge" and the focus on cultural reproduction in education (See Apple & King, 1977; Giroux & Penna, 1979).

occurs when speech and practical activity, two previously completely independent lines of development, converge" (ibid, p.24).

This argument was even expanded in situated learning theories which believed that learning is situated in the learners' identities and roles in participating in specific intellectual or professional communities or social practices. This was even supported by a few scholarly concepts such as the theory of situated learning (Brown, Collins & Duguid, 1989), apprenticeship in thinking (Rogoff,1990), peripheral participation (Lave & Wenger, 1991), Communities of Practice (CoP) (Wenger, 1999), the theory of distributed cognition (Salomon, 1997) and the participation metaphor (Sfard, 1998).
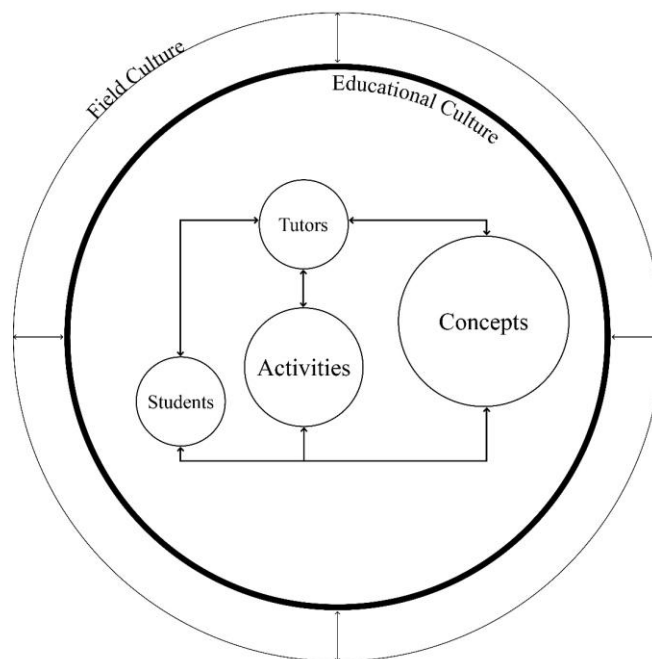


Figure 2.6: (by author) Components in Learning Cultures

Here, three significant components may be noticed in a collective view on these concepts: [1] the activities that students learn from, [2] the concepts that students try to understand through the activities, and [3] the learning cultures which represent the practices and values of indulging in these activities (Brown, Collins & Duguid, 1989).

Although the three may seem dispersed, in learning these parameters are connected and interdependent (Figure 2.6).

From the previous components, a definition of learning cultures can be assumed as the end product of the process of enculturation in learning and a way to ensure cultural reproduction in higher education (Bourdieu, 1982; Duguid, 2012). By enculturation, it refers to the students' adaptation to the socially constructed and sustained concepts, forms of knowledge, beliefs, and norms through various practices and activities such as imitation, observation, or interaction in the learning setting.

In another view on learning cultures, Jean Lave (1988) defined learning cultures as the lens through which students make sense of and meaning of what they are learning. Lave placed three ends to discuss:

- folklore stories, which are mostly stories of the "ways it is done" or how activities are achieved in the learning setting. Lave preferred to term it as *Just Plain Folks* (JPF)

- the learners or the students.

- the practitioners or teachers as experts in the profession.

Lave elaborated that even when learning environments are regulated by the institution or the teacher through planning and instructions, the folklore stories become the hidden symbols, orders to follow, or the "rules to play the game" in the educational setting. In most cases, students are more influenced by these folkloric claims rather than the explicitly planned instructions placed by the institution or the teachers (Lave, 1988; Brown, Collins & Duguid, 1989). Examples of such folkloric stories include casual

stories, prominent events or situations in the learning environment, or discussed interpretations.

In this view, learning cultures might be presumably defined as the collective folkloric stories and events that are embedded in the learning environment, on a larger lens, and within the educational participants' interactions (student with student or student with the teacher) on the smaller one.
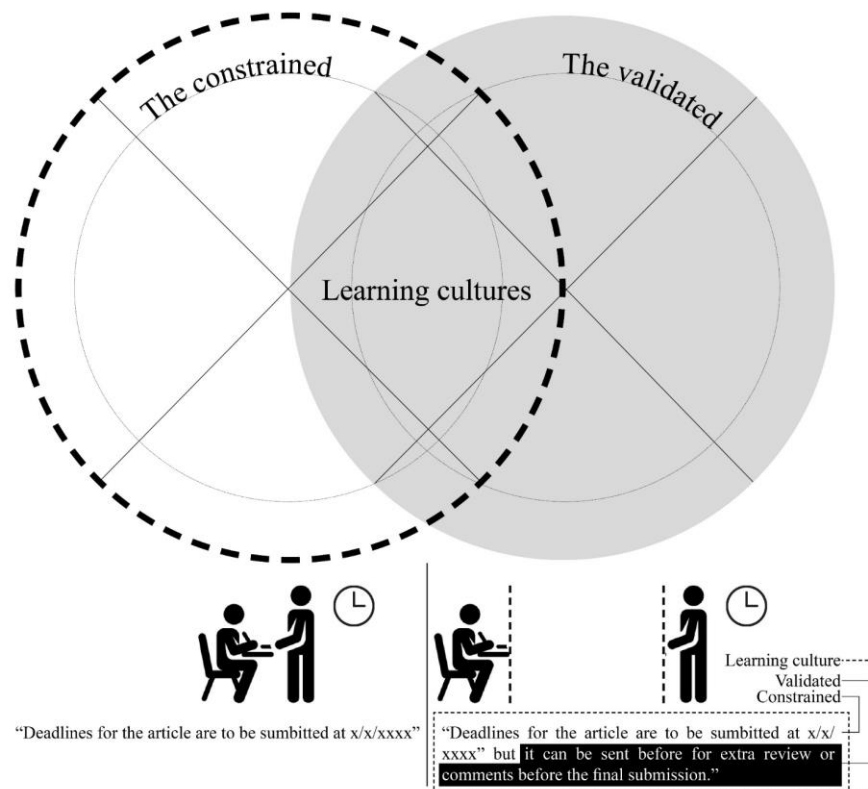


Figure 2.7: (by author) Learning Cultures in Higher Education Defined between the Constrained and the Validated

Another way to look into learning cultures, for a definition, is through their characteristics in higher education. For instance, learning cultures are characterized as being a two-way process (Coffield, 2000; Hodkinson & Colley, 2005). (See figure 2.7) While learning culture is affecting learners' activities and behaviors, learners in return

affect the overall learning culture and how it may be developed and sustained through its existence.

Thus, learning cultures can be defined as the structuring and structured learners' behaviors and actions that fall between the constrained and the acceptable or validated in the learning environment. In other words, learning cultures are the "ways of doing" and "ways of being" (Hodkinson, Biesta & James, 2007, p.420).

A unique definition of learning culture may also be seen from a Bourdieuvian point of view and the concept of *field*. For Bourdieu (1986) the field constitutes the social space with forces, changes, and "rules of the game", that affect the individuals' way of behaving within this space. This understanding of the concept of the field establishes a strong metaphoric system of forces that may be seen as a tool to define learning cultures and how it functions in higher education.

In explaining the system of forces, Hodkinson, Biesta & James (2007) noted two elements. First, the individuals represented, in an educational setting, as the teachers, the students, the faculty members…etc. Second, the tensions, relations, or exchanges that exist among those individuals which, in probable cases, are invisible and hard to be noticed at first glance.

The concept of the field of forces, in a sense, may refer to the learning site as a field that contains these forces. Although learning sites may provide a comprehensive entry to learning cultures and vice versa, but learning cultures and learning sites are not the same. In a way, the relationship here is a matter of interdependence, not resemblance.

In addition, while learning sites may have definite boundaries, which can be seen or measured, learning cultures may not be limited within sensible limits.[8]

In conclusion, table 2.4 demonstrates all the previous views in defining learning cultures and their perspective on learning in higher education.

Table 2.4: (by author) Definitions of Learning Cultures and their Perspective on Learning in Higher Education

| Definition | Perspective on learning |
|---|---|
| **The end product of enculturation** | Cultural reproduction in higher education (Bourdieu, 1982; Duguid, 2012) |
| **As the Folkloric stories** | Establish meaning to what is learned and the "way it is done" |
| **Structuring and structured view on individuals' behaviors** | In between the constrained and the validated in the learning environment. |
| **As fields of forces** | A metaphoric system consists of individuals and relationships. |

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[8] Learning cultures as fields of forces may assume a Lewinian view on the term. The field theory, for Lewin (1951), considered understanding any elements or forces within any field with its larger situation or context.

# Chapter 3

# THE ROLE OF DESIGN STUDIO IN ARCHITECTURAL EDUCATION

Architectural education, in most cases, has been peculiar to higher education contexts and in its position with the dominant forms of education, especially those in scientific and humanitarian disciplines (Cross, 1990; Teymur, 2011). Like any other design-related education, it took a unique pedagogical format of learning, this format relied on a sort of space, both in its physical shaping and its intellectual opportunity, in which students may indulge in discipline-related activities or interactions with other students or instructors for discussions that may seem useful in their development as professional architects (Crowther, 2013).

What is known as the design studio was and still, in all its derivatives and forms, a dominant teaching format of design and design-related prospects in several and diverse architectural programs. (Stevens, 1998; Mostafa & Mostafa, 2010)

## 3.1 Historic views on architectural education

To understand the importance and the value of the design studio in architectural education, the following represents a few significant historical narratives of architectural education that could help provide a background to the studio's pedagogical methods and ways of teaching architecture, architectural design, and architecturally related subject areas.

### 3.1.1 The 19th century *École des Beaux-Arts* in France

Advancing the medieval apprenticeship model, the early architectural program of the *École des Beaux-Arts* relied on, what was formally known at that time as *ateliers* which were led by what was called a *patron* or a studio master (Goldschmidt, et.al, 2010; Ciravoğlu, 2014). The main approach of teaching within these ateliers relied on the development of an initial sketch of a design solution, often referred to as an *esquisse*, out of the proposed design problem (Anthony, 2012).



Figure 3.1: École des Beaux Arts, Atelier Paulin. (Around 1900) From the Collections of the National Museum of Education (Grandes écoles, Inventory no.1978.02538.2)

In her mentioning of the French program, Webster (2005, p.266) used the term "articled pupilage". By articled, she referred to the assigning of each student[9] with a patron, in which each student can simply observe, imitate, and assimilate the skills and

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[9] Female students were admitted later towards the mid of 20th century, especially by the rise of feminist movements across Europe in the early 20th century

ways of thinking of their patrons in the ateliers for several years to develop their design knowledge and abilities and to be considered qualified to the practice of architecture. Although the French program initiated the launch of a more formal architectural education and affected many schools across Europe and Northern America (Goldschmidt, et.al, 2010), several shortcomings became noticeable in its teaching scenarios. These included (Anthony, 2012):

- The program was criticized for being mostly shallow and aesthetically concerned. From this concern, the proposed projects were irrelevant to any social or political climate and non-practical within the context outside of the school.

- The apprenticeship or pupilage model ensured authoritative boundaries between students and their patrons. In another sense, students were blindly guided by the validation of their patrons which, in return, resulted in a ritualistic learning culture that is highly subjective and one-directional.

- The closed juries offered in the Beaux-Arts were mainly judgmental and non-pedagogically aimed, critics judged the work of students behind closed doors without the presence of students or students' participation.

### 3.1.2 The Origins of Bauhaus in Germany

As the aesthetically-oriented pedagogical activities of the *École des Beaux-Arts* gained popularity, another architectural program also started to emerge as a contrast to the popular French program.

Founded by Walter Gropius in 1919 on German grounds, the termed, *Bauhaus* insisted on "learning by doing", promotion of craftsmanship and collaboration and innovation on projects on actual sites and contexts. The contrast was noticeable, the two programs,

in comparison, were seen in a spectrum from highly subjective and aesthetical to more practical and "real".

In addition, the focus on the methods of learning by doing represented two clear and complementary aspects within the architectural workshops of the Bauhaus: doing and learning (Figure 3.2).
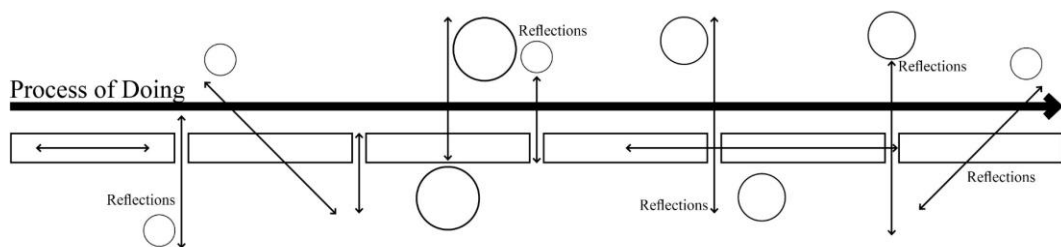


Figure 3.2: (by author) Learning by Doing Approach in the Bauhaus Workshops

On one side, doing was manifested in the project-based assignments which Archer (1979) saw as an essential parameter in defining the notion of design and design activities. On the other side, learning was assumed from the cycles of reflection or reflective thinking which, for Schindler (2015), disguised itself as a continuous process of "knowing" and an open-ended accumulation of knowledge and expertise.

To achieve its aims, the Bauhaus curriculum relied on a system of workshops that allowed students access to technicality in addition to theoretical development and intellectual reflection (Figure 3.3). This resulted in teachers, or what was known as masters, to be distributed into two ends: [1] workshop masters who are responsible for technical upbringing and development and [2] masters of form who not only were experienced in theories and intellectual thoughts but also had the experience in the practices of the arts (Whitford, 1984).
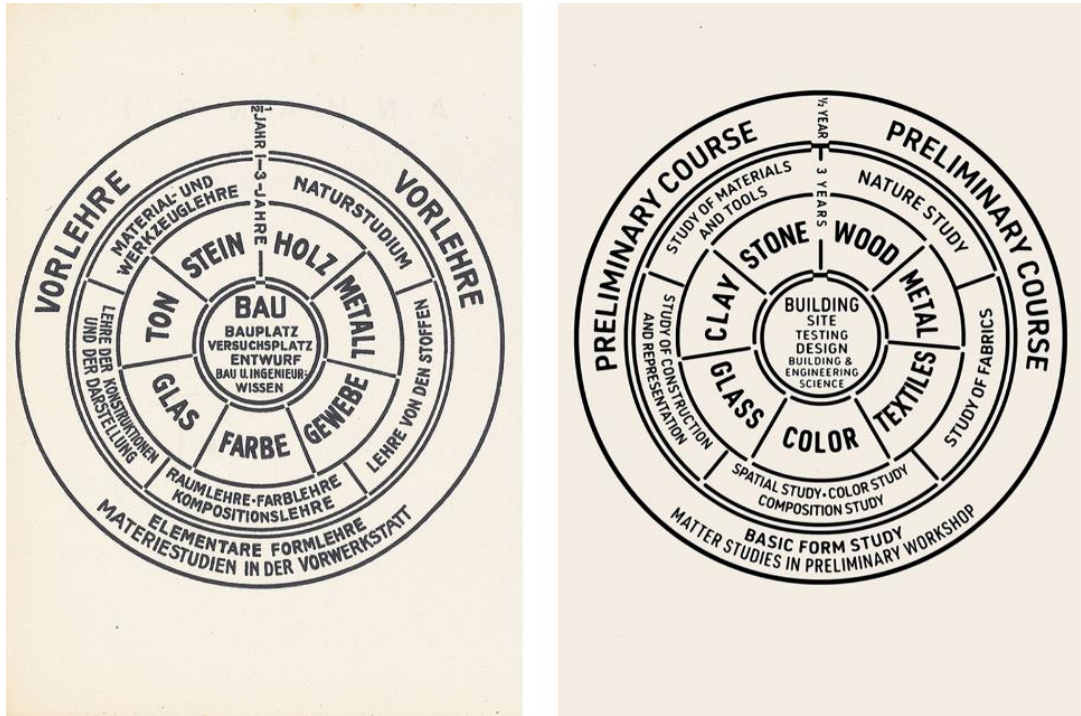
Figure 3.3: Schematic Curriculum of the Bauhaus (Adapted, Right), Walter Gropius, 1922. Bauhaus Typography Collection, 1919–1937. (The Getty Research Institute, 850513)

In further description, Cross (1982/1990) mentioned the experimental work of the Bauhaus, especially the introductions of Johannes Itten, which included further refinements to the architectural education experience and culture. A few of these introductions included the integration of the architectural program, as design education, with aesthetical and non-architectural domains such as music, dance, industry, physical wellbeing, and even dietary treatments. For Itten, these integrations were seen as supportive to the developments and experimentations of the designer's brain (Cross, 1982).

Although the Bauhaus was a distinct educational program that stood its place in the literature, the programs offered in the German Bauhaus had several reflections on its methods in teaching architectural design.

First, from a positive lens, the learning culture of the Bauhaus promised its admittees a learning culture that combined arts and technology for the benefits of the society, or what Ehn (1998, p.208) described, for the benefits "of the modern free man and women". Although the social agenda of the Bauhaus seemed promising in papers, Ehn (ibid) further added that this revolutionary contribution to the architectural academia was mostly narrowed to the freedom of designers in social change with the exclusion of society's everyday needs and conditions.

Second, the learning culture of the Bauhaus insisted on creating an educational program that reflects a way of living that strengthens the mind-hand relation through understanding and application (Güven, 2015).



Figure 3.4:Snapshots from the Masquerade Ball in the Faculty of Architecture of
METU in 1965, from the Archive.
(http://www.bauhaus-imaginista.org/articles/5600/for-the-faculty-of-architecture-at-
metu)

In her reflection on architectural education in Turkey, Erzen (2009) also noticed that Bauhaus's all-inclusive approach to education as a new way of living was evident in the early years of the Faculty of Architecture of METU. Here, students worked with their tutors with no time limitations or restricted class hours in the studio and the program was infused with many extracurricular activities that further supported its

approach to architectural education, these activities included: theatrical plays, masquerade balls, music performances…etc. (See figure 3.4).

### 3.1.3 The revival of Bauhaus in modern American architectural education.

One of the influential historic events that shaped architectural education in America, and most probably echoed to other schools of architecture, was the assumed "Harvard Battle" between 1930 and 1950 between Joseph Hudnut and German progressivist Walter Gropius in Cambridge, USA (Pearlman, 1997). An example of such an event can provide an insight into the learning culture of architectural education and what constitutes its particularities.

The battle towards reshaping the architectural curriculum, and possibly modernizing its schemes, began with the electing of Joseph Hudnut in 1935 as dean of the school. Hudnut made several introductions to achieve his progressive educational aims[10] at Harvard.

This included changes in the overall physical appearance of the building, the disciplines' segregation in the faculty, and the design studios' approaches in teaching design. (Pearlman, 1997; Anthony, 2012) Table 3.1 demonstrates these modern changes towards, what was assumed at that time as, a more progressive architectural education.

Table 3.1: (by author) Modern Reformations that Joseph Hudnut Made in the Faculty of Architecture in Harvard around 1935 (Pearlman, 1997; Anthony, 2012).

| The physical appearance of the spaces and the building |
| --- |
| -Remove the old sculptures and any partitions from the old Master's rooms. |

---

[10] Joseph Hudnut was influenced in his educational approach by three experiences: [1] his work with the city planner and civic designer Warner Hegemann, [2] his personal fascination with history of architecture and [3] his encounter with the works of philosopher John Dewey and his works on a more experimental and democratic education.

-Removed the walls in the draft room, separating the architecture, landscape architecture, and planning schools, to create one collaborative workspace with small spaces for more individual and close-on work.
-Painting the walls "modern white".
-Include adaptable glass and white partitions for exhibitions and other uses.

| The overall faculty |
| --- |
| -Dissolve the old faculty of architecture and combine the three segregated schools (architecture, landscape architecture, and planning) into departments in one school; the Graduate School of Design[11]. |

| The design studio approach |
| --- |
| -Introduced cooperative design studios across the three "new" departments (For example Introduction of the Town Planning Studio in 1935. |
| -More practical and socially and politically charged design problems (The monumental design problems of the Beaux-Arts (Temples, tombs…etc.) was replaced, for example, with low-income housing. |
| -Experimentation with materials and ways of construction. |
| -Modern educational narrative to be addressed in the studio includes space, human values, and community. |

In further attempts to modernize architectural education, Hudnut thought of a modernist to head the DoA and help him in his educational progressions. After many deliberations, Hudnut felt that the German educationalist Walter Gropius would be the ideal modern architect and professor needed to progress the school to its modern methods.

Within the late 1930s, Gropius, as chair of the DoA, worked hand-in-hand with Hudnut's vision of creating, to a degree, a modern architectural education that is socially responsible. Taking into consideration the collaborative nature of design which Hudnut insisted on through his merge of the school's disciplines (architecture, landscape architecture, and planning) (Pearlman, 1997).

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[11] Here, Hudnut referred to the new reformed school as the school of design to denote the common focus of all three school; design.

Figure 3.5: Walter Gropius Surrounded by Students in Harvard, 1946 (Pearlman, 1997, p.465)

Yet, Gropius had other intentions, embedded within his actions, of reviving the Bauhaus legacy in Harvard and filling the pedagogical gap that was left due to the abandonment of the Beaux-Arts traditions and ways of teaching. (ibid) Thus, by 1940, Gropius and Hudnut began to drift apart in arguments on how to address the new "modern" curricular in Harvard.
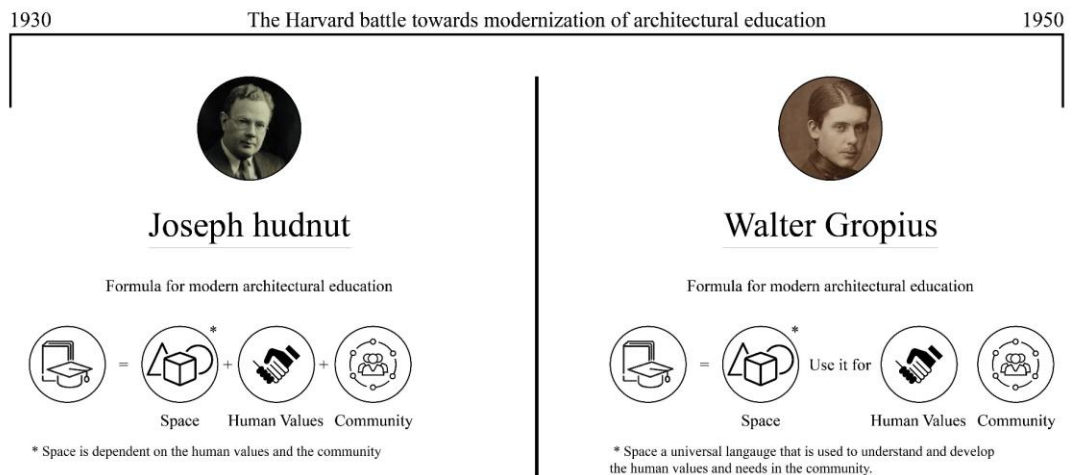


Figure 3.6: (by author) Joseph Hudnut/Walter Gropius Vision for Architectural Education in Harvard

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In the end, the "Harvard battle" saw two ways of interpreting a modern architectural curriculum (Figure 3.6). On one side, Hudnut called for a modern approach to architectural education that was socially and technologically enriched. His ideas of a modern architectural curriculum were ongoing progress that hasn't reached its unified philosophical peak[12]. For Hudnut, the learning environment of the modern architectural curriculum may have the focus on the configurations of space and its geometry, the human and social values that are, somehow, semi-attached to these spaces, and the communities in which these spaces are being designed and integrated into. (Pearlman, 2000)

On the other side, Gropius had a clear philosophy of what constitutes a modern architectural education. For him, students must acquire the universal language of design to meet the demands of society and help in its development. While Hudnut correlated architectural education with the outside community, Gropius saw architectural education as a stand-alone unification that could be used to reshape human values and communities. (Zumhof, 2020)

## 3.2 Current views on architectural education

These historic glimpses may have explained some significant characteristics of today's architectural education and learning approaches of its design studios (Cross, 1990; Cross, 1980). On one side, probably up until today, the "learning by doing" pedagogical approach is still manifested through project-based assignments and tasks (Franciscono, 1971; Broadfoot & Bennett, 2003). Indeed, students still learn much about design and how to design by simply doing the act of design (Lawson, 2006). In

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[12] See Hudnut, J. (1952). The three lamps of modern architecture: Lectures delivered at College of Architecture and Design, University of Michigan, May 12-16, 1952.

addition, "learning through reflection" is still a vital pedagogical opportunity for the project-based learning of the design studio in today's architectural programs (Webster, 2004).

It was even Fisher (2000, p.70), about the relevance of the Beaux-Arts teachings in today's architectural programs, in which he noted that "many of the features of today's design studio –the unquestioned authority of the critic, the long hours, the focus on schematic solutions, the rare discussion of users or clients – were begotten by that 150-year-old system."
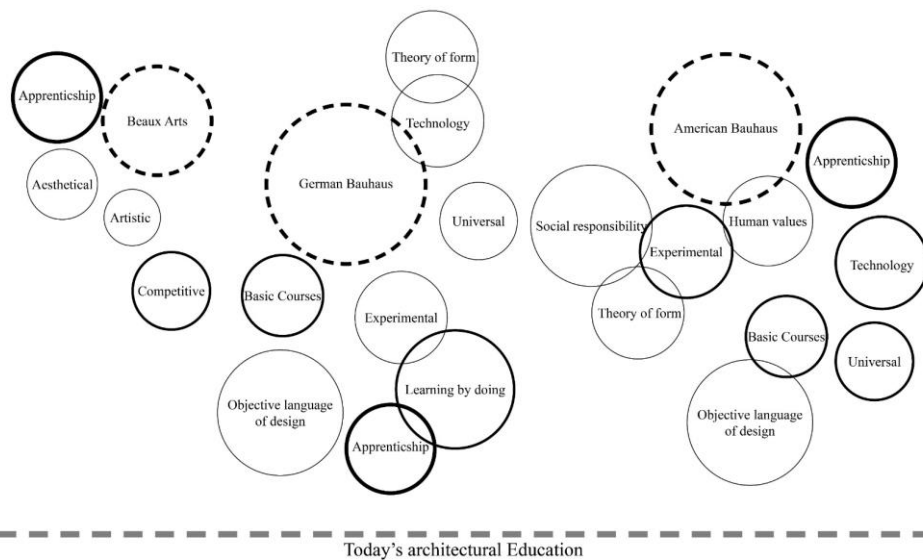


Figure 3.7: (by author) Keywords of some of the Aspects of Architectural Education through History

Further, one may notice a persistent aspect of architectural education that have survived until today, regardless of its interpretations, reformations, and considerations is the apprenticeship model that still depends on the direct guidance of students by instructors and/or professional designers (Simmond, 1980; Cross, 1982; Crowther, 2013). Figure 3.7 illustrates keywords indicative of aspects in architectural education

within these significant historic moments and how they may have landed to the 21st-century architectural education we know today.

Within the ongoing project NEST[13], De Walsche (2016b) helped to summarize some of the learning cultures that may reflect today's architectural education narratives. These learning cultures assume the school of architecture, and its design studios, as:

- **An isolated realm of ideals/ideas.**

Here, schools of architecture might be considered as learning cultures of intellectual concentrations and debates. This view is similar to Plato's Greek academy and its utopian discussions of what the outer world should be rather than what it is. In another sense, it deals with the school as a collection of physical spaces and elements and intellectual ceremonies and behaviors, in sort of sacred places of "rituals and walls" (See Aureli & Giudici, 2016). Even, it was Lawson (2006, p.8) who elaborated on this "place of fantasy" and how it affects students' learning abilities, acquired skills, and inculcated values in the process.

In this regard, these learning architectural cultures rely on students' abilities to create intellectual backgrounds which, in their bare form, are assumed to be strong and reliable enough to prepare them for the world of practice and its confrontations.

Yet, on architectural grounds, these discussions may end, in most cases, in the construction of art at the expense of important real-life issues. (Dutton, 1987)

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[13] NEST (New School of Thought) is an ongoing research project held in the University of Liechtenstein with the collaboration of many scholars form different schools of architecture and research centers across Europe. The main agenda of NEST is to inquire about different contexts, practices and educational models in architectural education in order to establish new ideas and "new schools of thought" within architectural education.

- **A simulator of real life.**

Architecture, as a design education is a multi-disciplinary and integrative process of research, reflection, and construction of knowledge that, in a sense, cannot be contained in the walls of an academic institution (Pilling & Nicol, 2000; Milliner, 2003). The use of a studio, as a teaching format of design, has long been argued by Schön (1987) as a *practicum*, a teaching format that resembles architectural practice.

This opposes the isolation of the learning culture of architecture with idealistic notions into a confrontation of real-life complexity and uncertainty (Schön, 1987; Cuff, 1992). Yet, according to De Walsche (2016b), this confrontation should be seen as a slow, steady, careful, and strategic passage from the realm of academia to the realm of practice.

Another benefit of the integration of academia, practice, and even society and the public as a whole is to meet the newly-raised challenges of educational restructurings and policy regulations[14]. NEST, as part of their project, surveyed several schools and programs of architecture in higher education institutes to understand how its learning cultures addressed the rite of passage from academia to practice (Figure 3.8).

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[14] One of the most influential educational restructurings in the late 20th century on architectural education in Europe, was the Bologna Process. The main aims of the process were a response to internationalization and digitalization and the expansion of the architectural academia to international and co-operative ends. Visit ec.europa.eu/info/education_en

**N.O.M.A.D**
University of Liechtenstein
**Based on:**
work directly with the built environment as creators of space.
**Learning Culture of Center:**
Space is created both with theoretical and physical contributions
Program re-creates itself with each project.

**TRANSark**
Norwegian University of Science and Technology
**Based on:**
Transformative Learning and experimental learning methods
**Learning Culture of Center:**
mental flexibility, personal responsibility and open-minded creativity.

**London School of Architecture**
**Based on:**
Integration of practice and academia and the institution
and the city.
**Learning Culture of Center:**
Does not have a fixed physical space.
Uses the city both physical (buildings and facilities) and non-physical
(network).

**Live Projects**
University of Sheffield, School of Architecture
**Based on:**
Get students out of the ivory tower of academia and into the real
world for social responsibility.
**Learning Culture of Center:**
Communication and participatory practice, collaborative
ways of working

**Confluence Institute for Innovation and Creative**
**Strategies in Architecture**
**Based on:**
The five thematic fields are neurosciences, new technologies, social
action, visual art and physics.
**Learning Culture of Center:**
Student's independent and critical thinking

Society

Practice

Academia

Figure 3.8: (by author) Surveyed Schools of Architecture and their Learning Cultures in Addressing the Academic-Practice Gap (See Kaps, Martinez-Cañavate, De Walsche & Nagibina, 2016)

- **As headquarter to initiate, but not limited to, learning.**

The stand of architectural learning cultures as headquarters does not confine learning in any time or space. It was even Masdéu & Fuses (2017, p.20), who acknowledged this flexibility in architectural learning and referred to the design studio as an "Architectural Lab". In this case, students refer to the school to report, test, or experiment with the knowledge that they accumulated outside the class or may use the class to accumulate knowledge to use in their outside-the-school

experimentation and learning. Here, the relationship is mutual dependence and exchange (Stevens, 1998).

This, according to Hester (1990), can define a learning culture with a new set of desirable skills and approaches such as communication tools and discovery platforms that would assist students in both learning settings (in and outside the school).

- **A contractual paradigm.**

Here, the learning culture is viewed from the institutions' point of view and the products of the educational experience. The institution provides the necessary qualifications needed to be met for the students to be validated and confirmed as graduates. By qualification, it refers to the educational certificate, issued on behalf of the institute declaring that the student has met the preset and planned requirements of the "contract". The contract, in this case, resembles the architectural program declared, the explicitly declared subject materials, and the knowledge offered and provided for students (Dutton, 1991; Webster, 2005).

- **A spatial paradigm**

In any educational setting, the spatial arrangement of its spaces and facilities do affect its learning environments. The design, shape, and planning of the space of the classroom or the studio, for instance, may indirectly affect the rituals or behaviors of students or teachers (Rohse & Anderson, 2006; Taylor, 2009).

For example, a school's open-plan layout may encourage collaboration, integration, and open discussions while a closed and partitioned plan may assume individualism and singular work. Thus, this spatial paradigm of learning cultures in architectural education links what is taught with where it is taught.

- **A place of mastery and love**

In this regard, learning cultures become the places that are built on opening up to the world. Through mastery, besides expertise, one may initiate a change and an interest in the world where (s)he is being educated into. This can be seen in Paulo Freire's view on education (See Freire, 1968/1994/1998) or John Dewey's educational philosophies (his work that includes *Democracy and Education* in 1916 and *Experience and Education* in1938).

Here, learning cultures might be assumed as places to instill a value system to care, be passionate and expressive through aesthetical self-expressions about that educated piece of the world and what can be done and should be done in these worlds.

In further elaboration, these identifications of learning cultures may also indicate the following aspects to be considered:

- The pedagogical schemes and events that are happening in the intellectual ends of these learning cultures that are an effective element to its formation and existence.
- The interactions between and with the members of the learning cultures both on academic and non-academic (professional or practice) boundaries.
- The spatial and physical configurations of the learning setting and how it may have a major role in the formation of its learning cultures. Yet, it should be mentioned that learning culture may also influence or require certain spatial arrangements that are necessary to its embedded practices or patterns of behaviors.

- The values of mastery, change, and willingness to initiate a response to the worlds where these learning cultures are being considered. This indirectly pours out to the values that are, in a sense, provide the basis of these learning cultures and why it exists.

Reviewing these cultures, it should be noted that these learning cultures are not separate or selective entities. In reality, these learning cultures may exist simultaneously on several degrees or levels or may assume their unique forms or interpretations. (See figure 3.9)
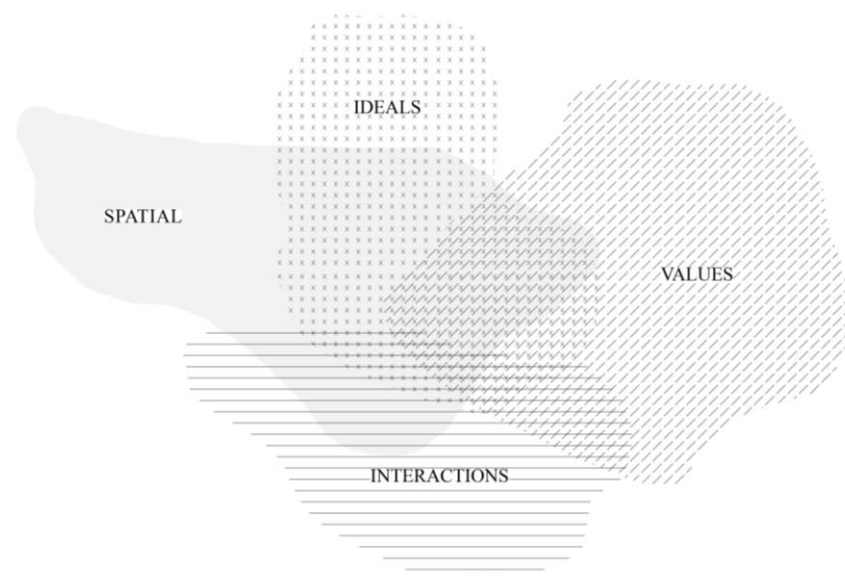
Figure 3.9: (by author) Aspects of Learning Cultures in Higher Architectural Education

## 3.3 Current views on studio cultures of selected architectural schools

Before attempting to question the design studio learning culture of the DoA of EMU, a brief overview of design studio cultures and learning cultures of several and selected schools of architecture were taken into consideration. The purpose of this overview is to try to grasp distinctive patterns in the aspects to be considered in the learning culture

of the design studio alongside the literature review provided. The selected schools cover different regions in Europe and United States and are selected for their quality in education and their impact, through their long history, in the discourse of architectural education.

In this case, the schools selected are Bartlett School of Architecture in University College London in the UK, DoA in Waterford Institute of Technology in Ireland, Faculty of Architecture and Urban Planning in the Technical University of Cluj-Napoca in Romania, Aarhus School of Architecture in Denmark, School of Architecture and Urban Studies of the Federal University of Rio de Janeiro in Brazil, School of Architecture in the National Technical University of Athens in Greece, School of Architecture in University of Genoa in Italy, DoA in Lucerne University of Applied Sciences and Arts in Switzerland and School of Architecture in Yıldız Technical University in Turkey.

In addition, other schools, for instance, those accredited by NAAB, provide clear statements and indications of their learning cultures through their explicitly-provided learning culture policies which might be beneficial to understand the scene on which their learning environments operate.

This includes several schools in the USA including the School of Architecture at Princeton University, Graduate School of Design at Harvard University, A. Alfred Taubman College of Architecture and Urban Planning at the University of Michigan, DoA in the University of Memphis, College of Architecture, Art, and Planning in Cornell University, School of Architecture in Montana State University, School of

Architecture + Planning in Morgan State University and College of Arts + Architecture in the University of North Carolina at Charlotte.

Based on the analysis of the studio/learning culture policies of the selected NAAB accredited schools in the United States and the discussions[15] held in the meetings of heads of the selected European schools in 2012 and 2014, (See Spiridonidis & Voyatzaki, 2012/2014) the following tables summarize several pointed and noticed aspects in each school's architectural learning environment or design studio culture.

Table 3.2: (by author) Summarized Aspects of the Overall Learning Culture of the Program in the Selected Schools.[16]

| Common theme | The overall culture of the program (learning culture) |
| --- | --- |
| **USA** | -The focus on synthetic thinking, critical thinking, problem-solving abilities<br><br>-The weight and position of the design studio within the whole program<br><br>-The historical continuation of the traditions of the early design studios |
| **UK** | -The focus on architectural and non-architectural subjects in the studio such as research. |
| **Ireland** | -The importance of extracurricular activities of the architectural program such as workshops, initiatives…etc. |
| **Denmark** | -The creation of a mindset rather than just mere skills.<br><br>-Extracurricular non-architectural activities or mental spaces (Open room in 2014 in Aarhus School of Architecture) are deemed important.<br><br>-The change in the department's categorization (The studio as a flexible platform of cross-disciplinary).<br><br>-The use of training or internship program, its place, and duration in the program. |
| **Brazil** | -Specialization such as Landscape Architecture, Urban Planning, Construction is all one part of the curriculum of the architect. |

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[15] The discussions included Stephano Musso, Johannes Kaeferstein and Mujdem Vural in the 13th meeting of heads of European schools of architecture. Also, the discussion by Murray Fraser, Máire Henry and Adriana Matei in session 4 of the 14th meeting of heads of European schools of architecture and discussions by Anne Mette Boye, Denise Pinheiro Machado, Konstantinos Moraitis in session 2 of the 16th meeting of heads of European schools of architecture.

[16] Note that a selected school does not represent the learning cultures and the studio culture of the whole country. The regions are only indications of the schools reviewed.

| | |
|---|---|
| | -Integration between the three cycles (primary, completion, and synthesis) |
| | -Three thematic axes of the project, of theory and history, and of technicalities. |
| | -Architectural programs are always reinvented. |
| **Romania** | -The long and continuous period of the program. |
| **Greece** | -Interdisciplinary collaboration between the domains of urban design, landscape design, and architectural design, in School of Architecture of the National Technical University of Athens. |
| **Switzerland** | -The program's s focus on non-architectural subjects such as research, thinking...etc. |
| **Turkey** | -The program to achieve student performance per national and international accreditation (27 criteria from NAAB & RIBA) and 35 criteria from MİAK (grouped in aspects such as design, history, technology, professional studies, and general subjects.)<br><br>-The shift from the 4-years program (known as USIS) to the 5-year program in the light of Turkey's Bologna Process.[17]<br><br>- An architectural program that focuses on three parts[18]:<br><br>  -Gain knowledge (verbal communication, visual communication, teamwork...etc.)<br><br>  -Apply knowledge (social issues, environmental considerations...etc.)<br><br>  -Produce knowledge (Comprehension, professional integration, and preparation…etc.) |

| **A collective pattern in all** |
|---|

**-The focus is on non-architectural subjects.**

**-The approach to interdisciplinary/cross-disciplinary/multidisciplinary...etc.**

**-The extracurricular activities**

**-The programs' time and curriculum design and planning.**

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[17] The Bologna process is concerned with promoting a unified approach and cooperation between higher education systems across Europe which includes Turkey among 48 other European countries. For more info on the process, see https://ec.europa.eu/education/policies/higher-education/bologna-process-and-european-higher-education-area_en

[18] In the case of DoA of YTU, these parts were discussed by Polatoğlu & Vural (2012) and Ünver, Polatoğlu & Vural (2014). These parts demonstrate the overall learning culture of the program and how each part aims and builds up on the previous to accomplish institutional and educational aspirations.

Table 3.3: (by author) Summarized Aspects of the Socialization or Collaborative Nature of the Studio in the Selected Schools.

| Common theme | The socialization/collaborative nature of the studio |
|---|---|
| **USA** | - Collaborative relations (instructors and students, students and students, students and external juries, and instructors with external juries.)<br><br>- Interdisciplinary collaboration and learning which includes collaboration between non-studio courses and studio courses.<br><br>- Active collaboration (amongst the professional community such as stakeholders…etc.)<br><br>- Dialogues play a major role in addressing or solving design problems. |
| **Greece** | -The concept of "team teaching" as a model of teaching. |
| **Ireland** | - The concept of peer learning and students learning from each other. (DoA in Waterford Institute of Technology has developed a particular workshop on 'effective tutoring' to teach senior students who are interested in being tutors.) |
| **A collective pattern in all** ||
| **-The collaboration between studio members (student/instructor/ professionals...etc.)**<br><br>**- The collaboration between disciplines related to architecture (landscape, urban, interior...etc.)**<br><br>**- The student-student interactions as "peer learning".** ||

Table 3.4: (by author) Summarized Aspects of the Studio Space, Equipment, and Atmosphere in the Selected Schools.

| Common theme | The studio space, equipment, and atmosphere |
|---|---|
| **USA** | - The space of the studio allows intellectual exchange, curiosity, and experiment.<br><br>- The student is held responsible for the work he/she produced and must be able or to develop the ability to defend and present his/her work.<br><br>- Compatible and contradicting viewpoints can co-exist in the design studio atmosphere.<br><br>- The variety and informality of the design studio's practices and activities.<br><br>- Human courtesy and etiquette in the shared space of the design studio.<br><br>- Healthy atmosphere (mental and body) is needed in the overwhelming nature of the studio.<br><br>- The furniture arrangement of the studio space must be able to adapt to the activities and practices of the studio. |

| | |
|---|---|
| **Ireland** | - The informality of the studio space through the concept of "peer learning". |
| **Brazil** | - Studio space occupation and the layout design of the faculty (the floor plans and interior plans of the studios). |
| **A collective pattern in all** | |

-**The space design of the studio (How it is planned).**

- **The occupation of the studio space (how it is used).**

- **The informality of the studio's atmosphere**

- **The mental/physical health of the studio's atmosphere.**


Table 3.5: (by author) Summarized Aspects in the Values/Value System of the Studio in the Selected Schools.

| Common theme | The values/value system of the studio |
|---|---|
| **Italy** | -The program should have "honesty" and "seriousness" as values and avoid "Fault, convenient or instrumental" values. |
| **USA** | - Design, Environmental stewardship and professional responsibility, Equity, diversity and inclusion, Knowledge and innovation, Leadership, collaboration and community engagement, Lifelong learning. (Discipline related)<br><br>- Respect between individuals, trust between the educational participants, optimism and positivity, innovation and discovery, and sharing and engagement (Humanistic). |
| **A collective pattern in all** | |

-**The studio's value system between humanistic values and values of the design discipline.**

-**The focus is on environmental considerations and social change.**


The overview provided emerging predominant themes that were common and shared upon the selected school's studio cultures. Based on the previous tables in this chapter, the four parameters reflective of the studio cultures among these schools might be assumed in four generic parameters. These are:

- The overall culture of the program (learning culture).

- The socialization/collaborative nature of the studio.

- The studio space, equipment, and atmosphere.

- The values/value system of the studio.

## 3.4 Aspects of design studio culture

To provide comprehension of the aspects and dimensions of any design studio culture, four notions must be clarified on the definition of the design studio (Figure 3.10).
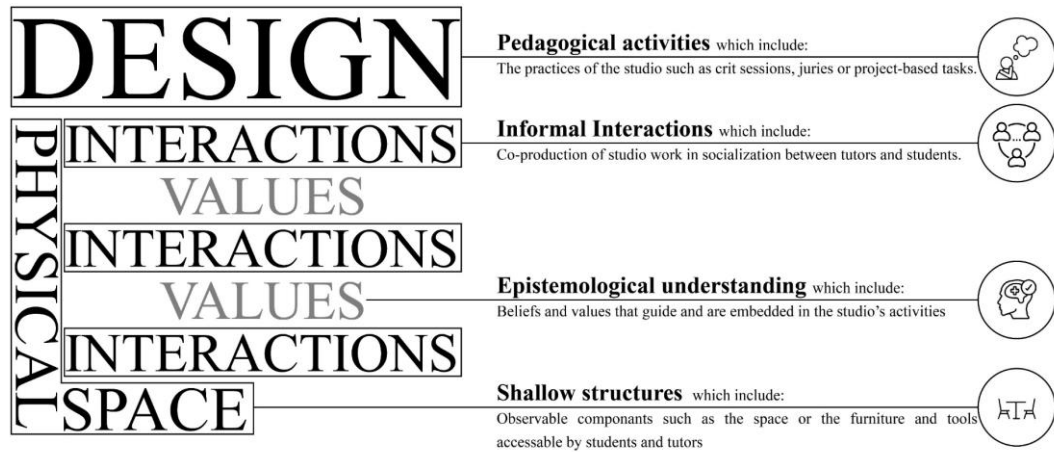


Figure 3.10: (by author) Abstract Notions that Define the Design Studio (Shaffer, 2003)

First, the notion of design as the predominant focus of any studio. Indeed, as seen, in all its forms throughout history, the studio has been assumed as a persistent and acceptable teaching method to teach and acquire design, design knowledge, and design skills and expertise. (Quayle, 1985; Stevens, 1998; Mostafa & Mostafa, 2010)

Second, the interactive scene of the design studio with the importance of communication, participation, socialization, and interaction between its educational members (students, instructors, professionals…etc.). For Pilling & Nicol (2000) and Ochsner (2000), the active scene of interactions in the studio may be considered an opportunity to learn, teach and even practice design and design activities.

Added to the previous, Cennamo & Brandt (2012) also noted the role of the studio's interactions in co-constructing design knowledge and the development of students' intellectual and physical abilities in design.

Thirdly, the physical space of the design studio in what Shaffer (2003) termed the *shallow structures* of the studio. These usually include, in a basic indication, the studio's furniture, display boards or partitions, or any feature of the studio that is sensible insight and can be used physically.

The fourth and last notion is the embedded values and unstated patterns of validation in the studio's learning and teaching practices. These socially-embedded values were mentioned by Dutton (1987) as *the hidden curriculum* and the social experience of the studio, which indicate the norms and values students may acquire in their learning experiences. Even Giroux (1983) mentioned one of the prime products of the hidden curriculum in producing identities and personalities with certain design values and ways of validation.

Thus, from the previous notions, the design studio can be seen as the intersection and the overlapping of the pedagogical methods, its member's interactions, the spaces that contain these interactions, and the values that justify its practices to create a dynamic learning environment (Broadfoot & Bennett, 2003; Shaffer, 2003).

### 3.4.1 The studio: Pedagogical perspectives

Noticed through its history, the studio has survived and obtained its position, with slight or moderate changes, as the dynamic space and pedagogical format to teach design and design-related aspects (skills, knowledge, ways of thinking…) (Crowther, 2013). It was Mostafa & Mostafa (2010, p.310) who stated that "architectural

education is based primarily around the design studio as a pivot and gathering point of all knowledge and skill accredited throughout the curriculum."

Positively, the dynamic space of the studio has paved the opportunity for many models and methods of teaching to emerge and has expanded the flexibility of its pedagogical applications (Taylor, 2009). Indeed, in the studio, there is no right answer or a correct way of learning about or to design (Rohse & Anderson, 2006).

One of the most influential models in studio teaching, as an exemplary but not limited, was the reflection in action teaching model elaborated by Donald Schön in 1987. (See Schön, 1983/1987)

According to Schön (ibid), based on the sustained approaches of learning by doing and problem-based learning, students are faced with ill-structured and slightly defined design problems, which, in a way, replicate real-life situations and issues they may face in professional practice. Yet, what makes the design process in the studio unique is not just the nature of these problems but also the know-how and the actions in dealing with these sorts of problems.

Indeed, Schön (ibid) extensively mentioned, that this "knowing in action" may require dynamic learning environments similar to the studio. Indeed, through reflective dialogues, through talking, demonstrating, sketching …etc., between students and instructors, design actions or behaviors get transferred from the instructor's own knowledge to the student's eager-learning self. Thus, the studio can easily be noticed within this model as the suitable format for its pedagogical aspirations.

In his studies and involvement in teaching design studios, Kvan (2001a) agreed with the importance of knowing in action and the role of the design studio upon improving skills and design knowledge required for such knowing. To support, Kvan (ibid) noted the following observations in the studio teaching:

- The process-oriented approach to design in the studio in which Kvan preferred to use the term "deliberations" to denote the knowing in action and its reflective cycles. Although process-oriented pedagogy is essential in the problem-based learning of the design studio, it is often marginalized in the focus of the end product. Kvan did observe that with the overwhelming focus on submissions and, in most cases, meeting deadlines or instructors' expectations, students are driven to develop an approach where the end product may seem more significant to its process.

- The importance of collaboration in the design studio, was viewed from two main attributes within the studio's learning culture: [1] time and [2] social relations. Viewed with each other, time was viewed as an essential notion that allowed students to build and form these social relations among each other. (Cheng, 1998) Yet, such a significant direction towards collaboration should not eliminate individualism within the studio's learning opportunities. Cuff (1992) clarified that the studio should, in its bare capacity, focus on the balance between individualism and collaboration rather than the assertion of one over the other.

- Communications in the design studio, where Kvan agreed with Schön's proposition on the tactic transmission of knowing through reflective engagements between instructors and students. Here, communication is based

on being "present" in the learning environment of the studio through observation, listening in, imitation…etc. (Broadfoot, & Bennett, 2003)
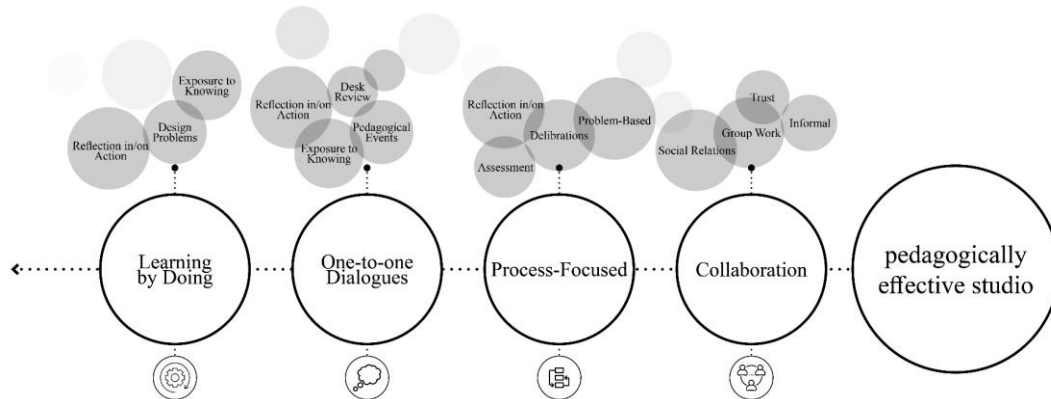


Figure 3.11: (by author) Pedagogical Aspects Towards an Effective Design Studio

Taking the re-assessments of design studio learning of Kvan, and from the viewpoint of Schön's model, figure 3.11 shows the set of attributes summarized to achieve a pedagogically effective design studio teaching.

Kvan (2001b) expanded the discussion[19] of these aspects with more details. Under, what he assumed as the pedagogical framework, Kvan considered the typical process of the design task proposed in the studio. First, the typical design task starts with the introduction of the design problem. In a contract-like format, a design syllable is handed to students with a description of the following (Uluoğlu, 2000):

- The main aims and objectives of the studio and the work to be accomplished.

- The outcomes of the studio which is translated from instructors' expectations of the studio work.

---

[19] Professor Thomas Kvan's original investigation in the early 21st century, roughly in the early 2000's, was directed towards the shift to an online design studio and established these frameworks as questionable objectives when making this shift.

- The context of the studio, the studio's schedule and milestones which describe each phase of the design process, its timeframe, submission formats and requirements, and the grading system of evaluation.

- Readings and topics that provide students with external and explicit knowledge to support their design development which include books, similar projects, and case studies, articles…etc.

In addition, this start to the design task may also include, with instructors' guidance, phases of data collection, inquiries about resources, site limitations, site possibilities, or any information that students might gather around the design problem proposed.

Second, design presentations and formulations of the design problem are introduced within formal and informal settings and interactions, where students present rough, multiple, and often unresolved materials to the discussion such as sculptures, sketches, 3D models, texts, images, photographs… etc. These discussions are often publicly displayed, where the physical space of the design studio may even allow other students to observe and listen in to other students' discussions. Also, these interactions reveal, what Kvan (2001b) assumed, instructors' contributions and students' responsibilities and obligations in achieving the learning objectives and outcomes (See Figure 3.12).
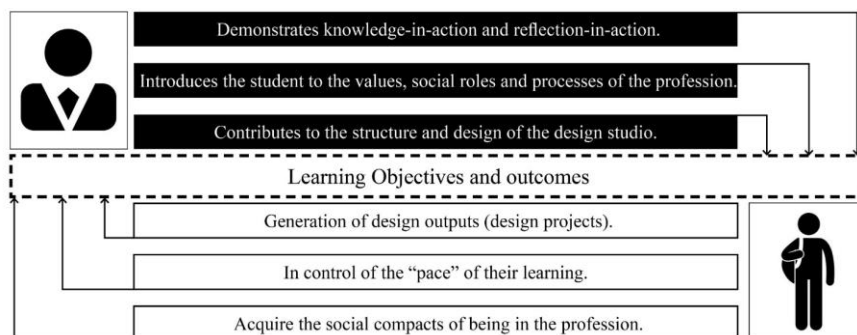


Figure 3.12: (by author) Contributions of Instructors and Responsibilities of Students in the Design Studio (Schön,1987; Kvan, 2001b)

Thirdly, and relatively assumed as the last phase of the studio's design task, students at the end of the studio course represent their optimum solutions for the design problem or their final design formulations for evaluation and grading through what is known as the review[20].

Here, the review represents, in its concept, a formal pedagogical event that can provide students with the platform to develop and reflect upon their design solutions with the feedback of experts or professionals alongside their studio's instructors (Anthony, 1991; Webster, 2007; Goldschmidt, et.al, 2010).

Although the process of the design task may seem linear in theory, in reality, the process is far more complex (Figure 3.13).

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[20] It was Anthony (2012) who indicated the replacement of the term "jury" with "review". This replacement was necessary to ensure a less intimidating and a more pedagogically enriched educational event and was considered one of the refinements to studio culture in American schools of architecture in the 1990's
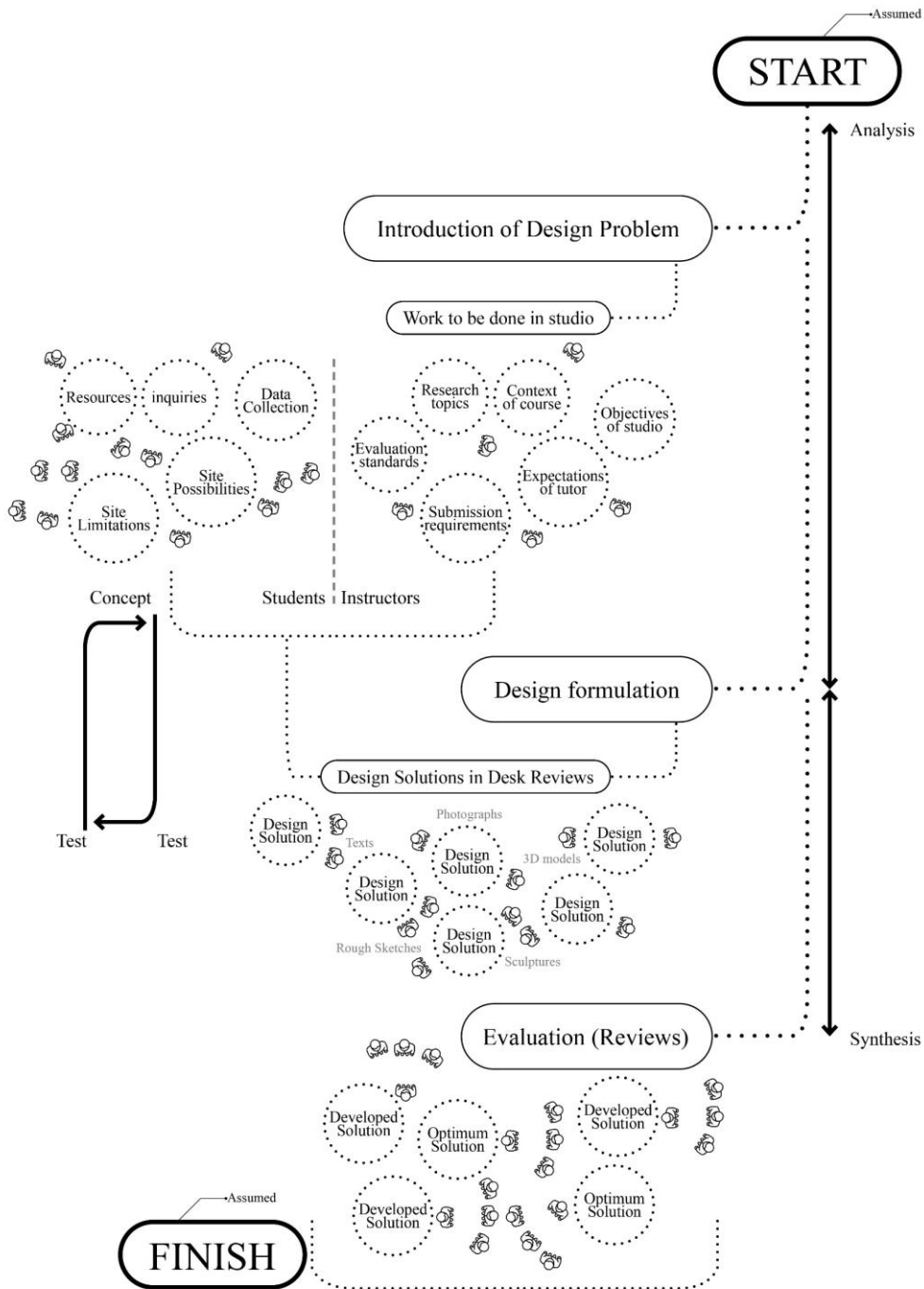
Figure 3.13: (by author) A View on the Process of the Design Task in the Studio (Schön, 1983; Ledewitz, 1985; Biggs, 1999; Uluoğlu, 2000; Kvan, 2001a/2001b; Delahaye, 2004)

In the majority of architectural programs, the progression of such design process, in the studio, throughout the curriculum, and across year levels can also be abstracted in

three predominant stages[21] (Polatoğlu & Vural, 2012; Ünver, Polatoğlu, & Vural, 2014). The following figure situates the design process in the studio, with its aims, as the studio level progresses within the architectural program.
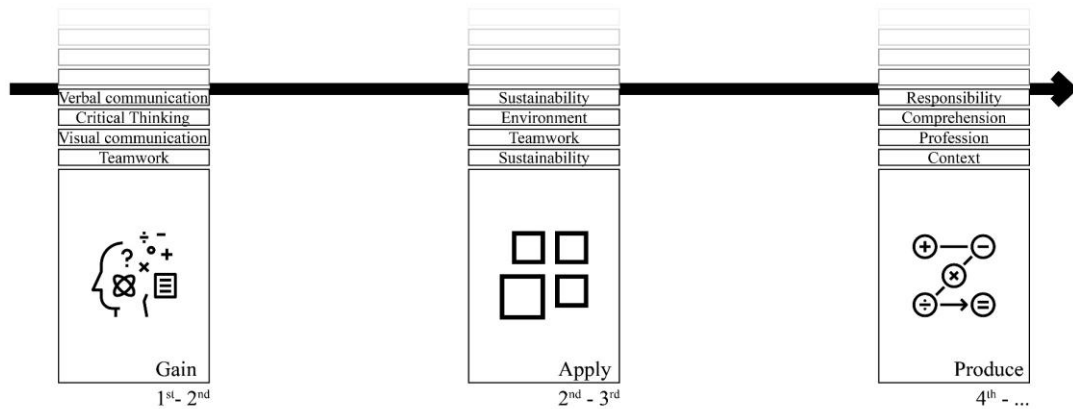


Figure 3.14: Three Stages in the Progression of the Design Studio Level in Architectural Education (Adapted from Polatoğlu & Vural, 2012, p.481)

Taking this understanding of the studio's process, and in an attempt to further elaborate on the pedagogical aspects of the studio model in defining studio culture, the AIAS report on studio culture in 2002 mentioned a few inputs to consider in this regard.

First, the concept of time in the studio's processes and practices that rely, in its major attributes, on continuous impulses of analysis and research, modeling experimentations, open-ended discussions…etc.

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[21] These three stages of architectural education were noted within the efforts towards drafting the 5-years architectural program at the DoA of YTU.

Figure 3.15: (by author) Focus on Time Management in some Snaps of Studio Policy of NAAB Accredited Schools.

Force, Koch, et.al (2002), in the report, noted that the learning model of the studio is considerably time-demanding, thus, many schools of architecture[22] are considering time management and consumption in its studios' cultures as an important variable

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[22] NAAB accredited schools of architecture are using the recommendations mentioned in the AIAS report on studio culture as a base in their proposed Studio Culture Policies. (See Force, Koch, et.al, 2002) In the overview of these studio policies, some aspects of time management such as the 24-hours use of the studio and the strategic use of studio time in accomplishing design tasks where collectively addressed and clarified in these studio policies.

that encourages students to make the most of their time in the studio and to develop healthy working habits (Figure 3.15).

Second, the report focused on the role of the studio, and its often-assumed isolation, in the architectural curriculum. This situates the studio in two positions (Boyer & Mitgang, 1996; Force, Koch, et.al, 2002):
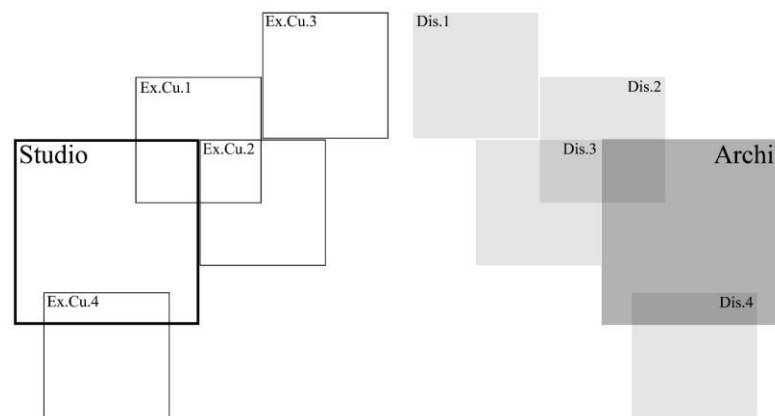
Figure 3.16: (by author) Studio's Relation with Extracurricular Activities and its Mirrored Integration of Other Disciplines.

- Studio's activities with external sources of architectural knowledge or experiences. For instance, this may include the extracurricular activities that address issues, concerns, skills, themes, or topics that are not addressed explicitly in the studio but have a certain contribution to its design practices and methods (Dalrymple & Evangelou, 2006).

- The role of the studio in the integrative process of design in both architectural and non-architectural dimensions. This includes the integration of the studio's learning environment beyond the assumed boundaries of architectural knowledge into dimensions of management, technicality, sociology, psychology…etc.

Situated more clearly in design education, it was Polatoğlu & Vural (2012) who noted such similar positions in what they assumed as the "informal studies" and their contribution to the development of architectural skills such as design thinking, the development of notions such as motivation and confidence and their role in the life-long development of designers.

Third, in a study that combined design studios in graphic design, industrial design, art and design, architecture, and landscape architecture faculties, Dannels (2005) attempted to explain the skills and the "ways to do things" developed by students during their interactions with instructors. Dannels (ibid) noticed that students developed the ability of self-expression, in other words, to listen, observe and form their information to represent and express their design processes to their instructors. This self-expressing notion can even be magnified when formalized in juries and final reviews. The setting of a student surrounded by professionals and fellow students can be intimidating even for experienced presenters (Figure 3.17).
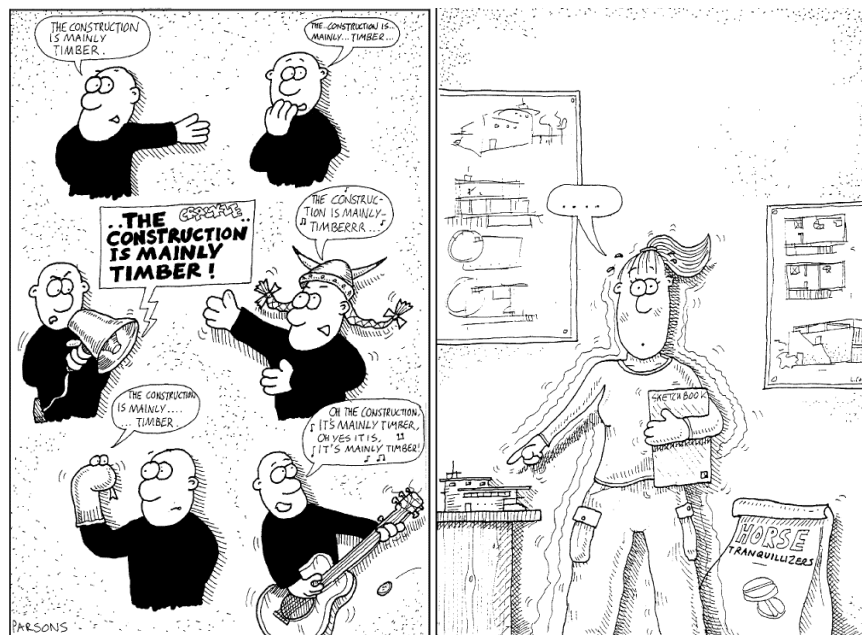


Figure 3.17: Cartoon Sketches of a Nervous Student Presenting a Project in a Review
(Parnell, Sara & Doidge, 2007, pp.47,50)

### 3.4.2 The studio: a scene of interactions

Within the architectural curriculum, design studios occupy most of students' credited hours. In most architectural schools, design studios usually are held two times per week with approximately four hours per session. It makes sense that such a curricular demand and a valuable teaching format could develop an eminent pattern of interactions between its educational members that hold, what Nicol & Pilling (2000, p.8) noted as, "a strong aspect of socialization and acculturation". Maybe it was Taylor (2009, p.218) who clearly stated that in the studio, "learning is social!".

Taking a view on the practices of the design studio, the interactions that are in place in these practices can be categorized into a spectrum depending on their pedagogical purpose and their degree of formality in the design studio.

It should be noted that although the categorization may seem as definite ends, formal and informal interactions in the studio are barely recognized on their degree of formality. Thus, the two should be assumed as a spectrum rather than two separate forms of interactions (Figure 3.18).



INFORMAL                                                    FORMAL

Figure 3.18: (by author) The Design Studio Interactions in Formality Spectrum

On one hand, the more formal and planned interactions are usually considered assessment tools in the form of juries or reviews (Anthony, 1991). These include, in

most cases, external members of educational and non-educational (professional) backgrounds beside studios' instructors (Dannels, 2005; Goldschmidt, et.al, 2010).

Frequently, these interactions are integrated with institutionalized objectives to provide a platform of evaluation to students' works (Webster, 2005). Based on principles of criticism, this type of assessment became a frequent instructional approach and an important aspect of the studio's learning process (Cossentino, 2002).

On the other hand, the more informal interactions that usually include the *crit* or, its more positive notion, the one-on-one desk review (Webster, 2005; Parnell, Sara & Doidge, 2007). It was Percy (2004) who noted these interactions as vital tools of socialization and enculturation in the studio format. During these interactions, instructors attempt to constructively criticize and comment on students' processes and projects. As a reaction, students try to reflectively consider these observations and comments to progress their design projects, develop their design knowledge and develop their design abilities (See Schön, 1987).

These events can be seen in two complementary views. First, as unique instructional and reflective tools in the studio format, in other words, as pedagogically-driven events (Cennamo et al. 2010; Hokanson, 2012). Second, ritualistic choreographed performances where students tacitly acquire how to be architects with the guidance and mentoring of their "expert" instructors (Nicol &Pilling, 2000; Webster, 2008).

Several studies tried to capture the interactive relationships of the studio and what constitutes the "informality" in these interactions (See Quayle, 1985;

Schön,1985/1987; Dinham,1987). Based on these studies, the informal interactions in the studio might be considered in three scenarios.

First, the scenario in which students personally and, in most cases unintentionally, interact with themselves or their projects. Through perception, reflection and other cognitive styles, such as divergent, lateral, or holistic thinking among many more, students personally indulge in their design tasks in an attempt to acquire design abilities and knowledge (Ledewtiz, 1985).

Even, it was Cross (1990) who noted this type of interaction as a form of constructive foresight. Cross established his notion on the indications of Gregory & Zangwill (1987) which assumed that design behaviors are the result of intelligent conversations within the designer. In a more apparent sense, these conversations manifest themselves as intuitive impulses within the design process. In a learning culture such as the design studio, these intuitive cycles persist through time and extended history into approved "ways of doing it" in the studio's practices.

Secondly, what Kvan (2001b) referred to as the social framework of the studio. During his investigation, Kvan considered two complementary parameters:[1] the tactic compacts and [2] the importance of "peer learning".

These, called tactic compacts, exist in the verbal clues or the bodily imitations such as body language, facial expressions, tone of voice…etc. Although, at first glance, these forms of gestures and expressions may seem arbitrary and insignificant in the studio's interactions, its role in influencing students' actions and behaviors with compacts such as motivation, enthusiasm…etc. is considered highly noticeable (Güler, 2015).

To clarify his approach on peer learning, Kvan assumed that since students are dealing with ill-structured and ill-defined problems, they might rely on a variety of individuals or sources of knowledge to comprehend the design problem situations. In this case, peer learning refers to students interacting with other students, in the same studio level or other upper levels, for guidance and coaching in their design problems formulations.

Kvan (2001a) even noticed the popularity of this concept in the learning culture of the studio and its importance in architectural design learning. For instance:

- Through interacting with other more knowledgeable students, students may seem more at ease discussing their ideas and issues (Cuff, 1992). In other words, the peer discussions may seem less evaluative than those with their instructors. Indeed, for Gray (2013) and Hokanson (2012), peer learning has been elaborated for its role in reducing the effect of power relations that usually charge students' interactions with instructors.

- Peer learning may also be beneficial to acquire secondary or additive skills that may support main design skills. This can be seen in its encouragement of collaboration as an essential professional preposition[23] (Gray, 2013).

The third, and probably most important, form of interaction in the studio is when instructors interact directly with their students. For instance, one more recent study, done by Jeffrey Karl Ochsner (See Ochsner, 2000), located the informal interactions between students and instructors in the design studio in similar contrast with an analyst-patient session in psychoanalysis. This psychoanalytic comparison to studio's

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[23] Gray (2013) related the concept of peer learning with Bourdieu's construct of *habitus* and how the social scene and interactions of the studio can develop what Stevens (1995, p.112) defined as "the unformulated dispositions to act and perceive" within the culture of that space.

interactions may seem extreme but it did expose an expressive and rather "personal" relation between students and instructors that may extend, in certain situations, through the limits of academic boundaries. Ochsner (ibid) referenced two psychoanalytic phenomena in describing the nature of the student-instructor interaction in the studio.

First, the phenomenon of *Mirroring*, defined as "long-term giving the patient back what the patient brings. It is a complex derivative of the face that reflects what there is to be seen" (Winnicott, 1971, p.117). In other words, mirroring refers to the analyst who merely listens, observes, and recites back to the patient, with no interpretations, what was presented verbally and non-verbally from the patient. Winnicott, in his elaboration of the concept, admitted that although mirroring may seem obvious and straightforward, it is not an easy task as it may seem.

Reflected on the studio's interactions, instructors, during their one-on-one desk reviews with students, may respond to students' words, sketches, drawings…etc. by simply describing and repeating what was said and done. Over time, and with the use of mirroring, understandings and discussions start to crystalize over the design problems proposed (Cuff, 1992; Fleming, 1998).

Second, the studio's interactions, like any other humanly-based interactions, are an educational method usually charged with various emotional reactions and responses. In this regard, Ochsner (2000) related this aspect with another psychoanalytic phenomenon known as *Transference*. In definition, transference refers to the reflection of past feelings, emotions or experiences developed earlier in life back to current situations. Cuff (1992) described the nature of the discussions between students and instructors, in the desk review, as unstructured and un-logically sequenced sets of

topics that often seem uncertain and unclear in their direction. As a result, students may trigger certain emotional responses, negative or positive, during their interactions with instructors that may be the result of past educational and life experiences.

Another similar sentimental view on the instructor-student interactions is when students, in probable cases, look up to their instructors as sources of knowledge and as skillful figures that (s)he must acquire. In this case, the instructor becomes a role model and an aspiration to students during these interactions (Goldschmidt, et.al, 2010).

Looking on student-instructor interactions within the studio, Goldschmidt (2002), based on Quayle's (1985) taxonomy, further developed three categorizations of instructor's personalities that may reflect the nature of these interactions, these personalities are:

- The expert or the instructor who possesses a complex set of knowledge and skills that the students must or aspire to acquire in their learning.
- The coach or the instructor who observes, guides, and navigates the know-how and skills that the student already acquired and will acquire within the process of design. In describing the "coaching" role of the studio's instructor, Schön (1985, pp.63-64) noted that "the student performs and presents the results of his performance; the master "reads" what he observes and tries to make interventions matched to the student's understanding and problems." Chris Argyris, based on his study in 1981 and during his work on the nature and content of the studio's interactions (see Argyris, 1981), noted that when students move into upper levels in the architectural curriculum, coaching, with a mild display of authority and power, might be more effective to orient them towards a more effective learning experience.

- The "friend" that provides encouragements and positive complements to ensure that the student's learning experience is being validated and accepted to the instructor's expectations.

Moreover, there are other aspects to be considered, especially in the instructor's character, that may influence the studio's informal interactions. In one view, Uluoğlu (2000) noted the importance of instructors' traits, their role as architects, and their expertise as professional designers.

Uluoğlu (ibid) claimed that, within the architectural desk review in the studio, the educational role of the instructor took mostly 47% while 33.3% is influenced by her/his personality and 16.3% is facilitated as a professional designer or an architect. This denotes a larger understanding of the role of the instructor beyond educational boundaries; the instructor as a person and as a designer.

Overall, while the previous may have provided some particular views on the informal interactions of the studio, table 3.6 summarizes these views with their major aspects.

Table 3.6: (by author) Views on the Informal Interactions in the Pedagogical Events of the Studio

| Views on informal int. | Aspects of this view |
| --- | --- |
| Cognitive | -Students personally and, in most cases, un-intentionally interact with themselves or their projects. |
| Personal and human-based | -Psychoanalytic comparison<br>-Role-modeling<br>-Self-expression |
| The character of the instructor | -The expert, the coach, and the friend.<br>-The instructor's personal traits and her/his role as an architect or a professional designer.<br>-The ideologies, historical narratives, or cultures that are transferred and introduced |

### 3.4.3 The studio: features of the physical space

In the previous definitions of learning cultures in higher education[24], learning cultures were seen in Bourdieu's concept of the *field* (See Bourdieu, 1986; Hodkinson, Biesta & James, 2007). Here, Bourdieu assumed that learning cultures are contained fields of forces, interactions, and exchanges of knowledge between the members of those fields. Taking this Bourdieuvian point of view on the architectural design studio, the forces of interactions can resemble, in a way, the design studio's informal interactions which were previously discussed. Yet, a missing piece of this view is the importance and the role of the containing field on these interactions. In other words, the importance of the physical space of the studio or its spatial arrangements and elements on the practices and interactions of the studio.

Taylor (2009) clearly stated that the interactions of the studio do indeed have a counter influence from the physical space of the studio itself. For instance, the adaptive desk arrangements, the movable instructor's table, and the all-around displaying partitions are all part of the flexible space of the studio and its learning environment. This adaptability and movability of the furniture of the studio come as an approach to encourage its variant and flexible pedagogies and ways of teaching to and about design (Monahan, 2002; Jamieson, 2003; Taylor, 2009).

Further, the flexible arrangement of the studio's furniture and its comfortability in use may, according to theories of possibilism[25], validate certain behaviors at the expense

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[24] See table in chapter 2 of the summarized definitions of learning culture and its perspective on learning in higher education.

[25] Such theories may be elaborated through the concept of *Possibilism* by Lucien Febvre in the mid-20th century that correlates human behavior to the built environments in which humans are not simply passive consumers of the environment but rather active figures that may enhance, add or change the environment to best suit their practices, aspirations or needs.

of others (Strange & Banning, 2000; Bartlett, 2003). Taking this advantage to good use, instructors use this flexibility to reconsider the space of the studio and its learning potentials according to what is suitable to the learning objectives and outcomes (Lackney & Jacobs, 2002; Taylor, 2009).

In 2016, VMDO architects developed an understanding of the design of learning spaces and their impact on students' learning. By integrating traditional learning schemes with improved innovations, figure 3.19 demonstrates the wide spectrum of several learning spaces as shown in their investigation.
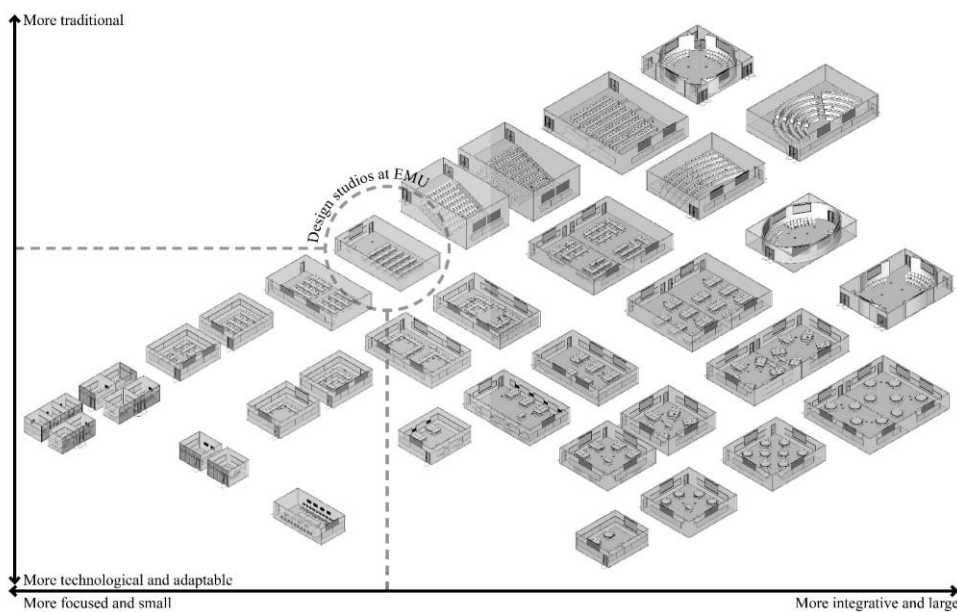


Figure 3.19: Learning Spaces Variations in Higher Education and the Situation of Architectural Design Studios in the DoA of EMU (as it is indicated by author) (https://issuu.com/vmdoarchitects/docs/learning_spaces_book_singles)

Taking an exemplary view of the physical spaces of the architectural design studios, selected schools in the ongoing project NEST were roughly investigated for their spatial arrangements and their effect on the learning culture of the studio (Papathanasiou, 2016). First, a comparison must be established between two,

predominant, spatial arrangements of the design studio: the open-plan studio space and the separate rooms studio spaces.

On one hand, in discussing open-plan spaces and their influence on learning cultures, the project took a look at the following schools: College of Architecture at the Illinois Institute of Technology (IIT), Nantes School of Architecture (ENSA), and Irwin S. Chanin School of Architecture of the Cooper Union in New York.



Figure 3.20: Crown Hall Studio in the Collage of Architecture in IIT. Photo by Lukasz Kowalczyk (https://arch.iit.edu/about/studio-culture)

The College of architecture in IIT, designed by Mies van der Rohe in 1956, consists of two levels: an underground level that contains the workshops and a ground-level that includes teaching rooms and studios. The open plan layout is manifested in the ground level with a few partitions for flexible or needed enclosures. Mies mentioned that the main essence of an open plan layout is that it allows collaboration, integration, and a collective learning culture that unifies related disciplines, from craftsmanship to theory, within the same space (Blaser & van der Rohe, 1986).

In the case of the school of architecture in Cooper Union, its first Dean, John Hejduk in 1974, divided the school's educational layout into two themes: [1] individuality through small and enclosed spaces for more intimate courses such as painting or poetry and studios for fifth-year graduate students and [2] collaboration within a main open-plan working studio, with students, from first to the fourth year, all working together (Figure 3.21).



Figure 3.21: Third-floor Studio in Cooper Union that Combines All Students from the First to the Fourth Year. (http://www.nadaaa.com/blog/the-irwin-s-chanin-school-of-architecture-of-the-cooper-union-among-five-top-architecture-schools/)

Since the school, pedagogically, aimed to deal with the basic architectural principles such as form and space, the main working studio allowed an integrative learning culture to address these notions.

In the Nantes School of architecture, the layout is in a similar spatial arrangement to the Cooper Union. The school consists of two types of spaces: enclosed for administrative offices or services and an open-plan working studio. It was a rather intentional decision of the school to keep the open-plan layout autonomous and

adaptable due to the school's involvement with the Bologna Process (Ursprung, 2015). In its current state, the studio space can adapt to any future reconfigurations required by such a process.



Figure 3.22: Open-plan Studio Space in the Nantes School of Architecture to Encourage Variant Activities and Interactions (https://www.nantes.archi.fr/lensa-nantes/lecole/)

On the other hand, schools such as the Faculty of Architecture of the University of Porto (FAUP) and the Architectural Association School of Architecture (AA), relied on small and sort of enclosed studio spaces as competitive units and distinct pedagogical territories within the school. Instead of roaming in modern and open-planned spaces, Brett Steele, the director of AA, saw the enclosed studios as possible worlds of choice and discovery within the learning culture.

Similarly, FAUP, designed by Álvaro Siza, saw the same opportunities in its learning culture. To achieve the main aims of the school, Álvaro designed the studios as classroom spaces, in three identical towers, where students work in small and more focused groups.

Overall, figure 3.23 demonstrates the openly integrative nature of the learning culture in an open-plan studio and the more focused learning culture in the contained and separate studios.
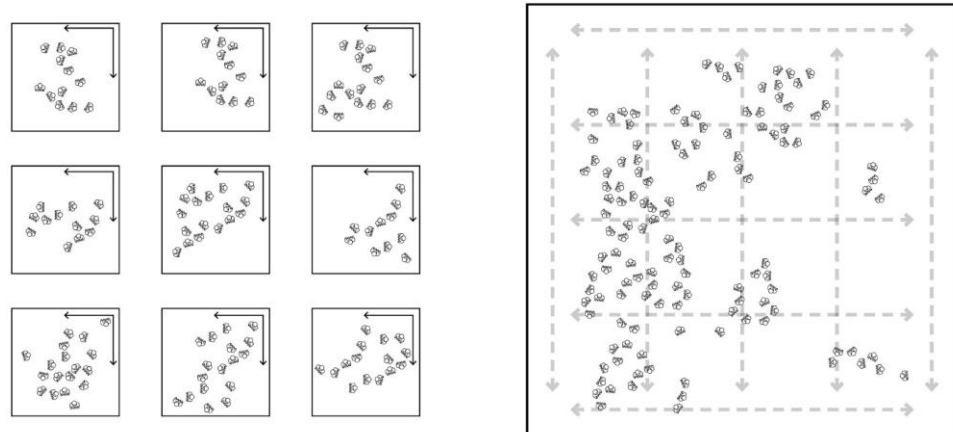


Figure 3.23: (by author) Comparison Between the Separate and Contained Studio Spaces and the Open-Plan Studios in their Approach to Learning Cultures

In addition, table 3.7 summarizes the strengths and weaknesses of these two spatial arrangements and their assumed effect on the learning culture of the studio. These comparisons can be statistically supported by Prof.Dr. Elmira Ayşe Gür, in her study on the two types of studio spaces in Istanbul Technical University (ITU) (See Gür, 2010).

Table 3.7: (by author) Comparison Between the Strengths and Weaknesses of the Open-Plan and its Derivatives and the Enclosed Studio Space.

| The space | Strengths | Weaknesses |
|---|---|---|
| Open-plan | -Practice defines the space<br>-Resilient to educational reforms.<br>-Spatial flexibility.<br>-Holistic learning environment of visual/verbal communication, shared visions, and exposure to information.<br>- Groupwork appropriate. | -Distractions are present.<br>-Difficulty in obtaining the focus of the instructor.<br>-Non-personalized studio environment (a more public learning space). |
| Enclosed | -Focused practices.<br>-Student's apprehension of scale. | -Collaboration and group work may not be sufficient. |

| | -More control over the pedagogies and content of the studio. -Personalized working space (Home + studio) -The distraction can be minimized. | -Too much control from the instructor's side. -Limited interactions amongst different studios. |
|---|---|---|

In addition to these predominant spatial arrangements, more progressive, and rather unusual, studio spaces may also be put to the fore (Papathanasiou, 2016) These include: [1] The "simple box", [2] the pavilion-inspired space, [3] the transportable space, [4] the no-space studio and [5] the in-the-community studio space. The following represents a brief insight into these studio spaces with some noted examples.

First, the "simple box"[26], as it was implemented in Southern California Institute of Architecture (SCI-Arc), took an open-minded laboratory-like experience in its learning culture. In its founding aims, the SCI-Arc insisted on a learning culture of experimentation and hands-on projects but without the limiting boundaries of an academic institution. To fulfill its aims, the working space of the school is occupied in a large industrial building with no partitions or divided spaces, in another word, a simple box. The space is an empty canvas that can be interpreted in many zones, spaces, or interpretations (Figure 3.24).
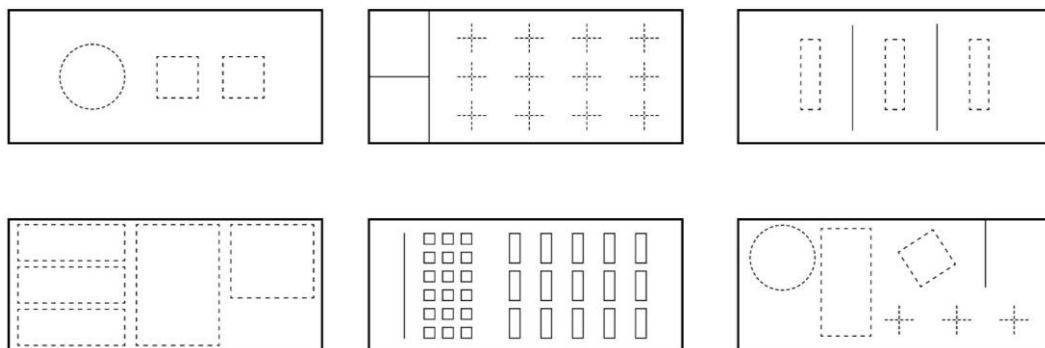
Figure 3.24: (by author) Different Variations of the Simple Box Studio Space.

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[26] The school also contain what is known as the Magic Box, which contains SCI-Arc's technological fabrication lab. It is a space that pushes the experimental approaches of the school to digital means and ends.

Although this type of space might seem like a derivative of an open-plan layout, the simple box simply represents the school's entire spatial arrangement rather than a small open space among other spaces. Thus, the simple box may seem like an exaggerated version of the open-plan layout.



Figure 3.25: Students in an Undergraduate Visual Studies Session in SCI-Arc
(https://www.sciarc.edu/academics/undergraduate/visual-studies)

Second, the pavilion-like studios resembled an isolated structure that may have a direct connection between its indoor and outdoor spaces. Such studios can be noticed in, as an example but not limited to, the Institute for Lightweight Structures and Conceptual Design (ILEK) at the University of Stuttgart.

The tent structure of the working studio, built by the tensile master Frei Otto in 1967, was a light pavilion-like structure infused with outdoor experimental spaces for students and an open-air lecture theatre (Otto, Nerdinger, et.al, 2005).

Figure 3.26: Interior Space of the Institute for Lightweight Structures at the College of Technology in Stuttgart (https://www.archdaily.com/608506/12-things-you-didn-t-know-about-pritzker-laureate-frei-otto?ad_medium=gallery)

Instead of an open-plan layout within the walls of an institute, one of the strengths of the studio spaces in ILEK is the connection of the learning space of the studio with its surrounding contexts or its green spaces. These outdoor extensions of the studio become an immediate learning environment for further or larger experimentation or outdoor teaching.

Figure 3.27: Frei Otto Holding a Seminar in the garden surrounding the ILEK in University of Stuttgart, 1968. (https://radical-pedagogies.com/search-cases/e14-institute-lightweight-structures-university-stuttgart-ilek/)

Third, another unique manifestation of the studio space, and its physical appearance, questioned the fixation of the space in a singular location. In 1973, Peter Murray and Cedric Price, collaborating with Architectural Design Journal (AD) and the Architectural Association (AA), took a rather unusual approach to the studio space. They transformed a double-decker bus into a mobile studio space to teach architectural design.

Although the bus, as a unit, provided minimum space for the studio, the mobility of the bus created opportunities for that space to be paired with a variety of learning cultures from different institutions. Also, it allowed student-centered learning culture freed from institutional constraints and rather enforced learning cultures.[27] As the bus made stops with different schools on its route, students explored the hosting school's

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[27] At that time, roughly the 1970's, many students and educators regarded architectural education as outmoded and in case of ambiguity (See Sunwoo, 2010).

learning module and even collaborated with its students on the proposed projects (Harris, 2016).



Figure 3.28: The Polyark Bus and First-Year Students of the AA with Peter Murray, 1973 (Harris, 2016, p.3)

Fourth, in addition to these unusual spatial arrangements of the studio, the London School of Architecture (LSA) took a unique and affordable approach to the studio space. The studios, and the school for that matter, do not have a fixed space or a permanent location. Practically, LSA has collaborated with several architectural offices in which students can join in, as part-timers, from their first year at the school. The offices, collaborating with the LSA program, must provide a salary and a reasonable commission that would eventually cover up the two-years tuition fees of the school (Winston, 2015).

This view on studio learning not only provides an attempt to bridge the education and practice gap but also provides an affordable and economically reasonable architectural education. Instead of students working on imagined projects within an objectively

accredited studio in a higher education institute, they can simply join a paid learning

experience using the existing working spaces of the collaborating architectural offices.



Figure 3.29: Students in the London School of Architecture in Collaboration with
Orms (https://www.orms.co.uk/london-school-architecture/)

Lastly, an interesting variation of the studio space can be noticed in the design-build

program proposed in 1993 in the School of Architecture, Planning and Landscape

Architecture at Auburn University.



Figure 3.30: Students in Rural Studio Program in One of the $20K Housing Projects
(2008-2009) (https://www.moma.org/explore/inside_out/2010/10/07/rural-studio-
and-the-20k-house/)

The program focuses on hands-on and community-engaged learning experiences. The studio space is the neighborhood, the block, or near the site where the building will be designed (Figure 3.30). Students, in the Rural studios of the school, plan, design, and build their projects with an on-site learning culture that is based on collaboration, engagement, and playfulness among many more.



Figure 3.31: Rural Studio Students in the 5th Year Halloween Reviews that Focus on the School's Approach to Playfulness. (http://ruralstudio.org/happy-halloween-reviews/)

### 3.4.4 The studio: the embedded values

Any architectural curriculum, like any other higher educational curriculum, can be assumed within two ends (Dutton, 1991; Webster, 2005). On one, there is the declared formal curriculum that clarifies areas of knowledge, technical expertise, and design abilities. On the other, there is, most referred to as, the *hidden curriculum* that is manifested through values, norms, or, in most cases, beliefs that find their way into validation.

Here, the architectural design studio and its assumed set of values can be viewed as two sides of the same coin. On one side, values that are assumed as non-design values

but may affect the learning culture of the architectural curriculum. These can be noticed in values of (Force, Koch, et.al, 2002):

- Respect which includes consideration of the value of time and time management, in addition to the respect of the studio's physical space and its proposed practices and interactions.

- Sharing as these values indicate: [1] the collaborative and interactive nature of the studio that depends on aspects such as students' developed confidence in sharing through verbal and visual forms of communication and [2] the architectural curriculum's interdisciplinary nature through the use of extracurricular activities.

- Innovation through the encouragement of critical thinking and creative and intuitive problem-solving strategies.

- Engagement of the communities both locally and internationally and the involvement in social and environmental issues.

- Optimism in students' abilities in the acquisition of architectural and non-architectural skills and the capacities of design in social change.

On the other side, the often declared as design values might be seen in its significance to the design process and underly, in its prime, design principals, design decisions, or design outcomes (Rowe, 1987; Lawson, 2006).

Design values, and their faucets, may be viewed within a wider lens on the profession and the larger context of design that includes design movements, societies designed for…etc. For instance, Birkeland (2002) claimed that design values may be partially influenced by society's wider aspects. Perhaps, it was Boyle (2004, p.182) who

described the influence as follows:" if building is for the people, should it not be of the people? If building is to invoke virtue, should it not itself be virtuous? If building is to be meaningful, should it not embody meaning in itself?".

Moreover, Wilson (1996) established that design values are mostly inclined from dominating movements such as Modernism, postmodernism...etc. In most cases, these movements are considered predominant in the realm of design and are charged with documented and applied sets of values in which students cannot escape its influences.

While the influence of these design values may be great, its application typically varies from one student to another. For instance, some students may use it consciously in structured awareness while others approach it unconsciously or arbitrarily within the learning culture of the studio (Lawson, 2006).

Taking these generic sources into account, and for elaboration and understanding, design values can be categorized into three major perspectives. (Figure 3.32) These include design values from [1] an aesthetical perspective, [2] a social perspective, and [3] an environmental perspective (Holm, 2006).
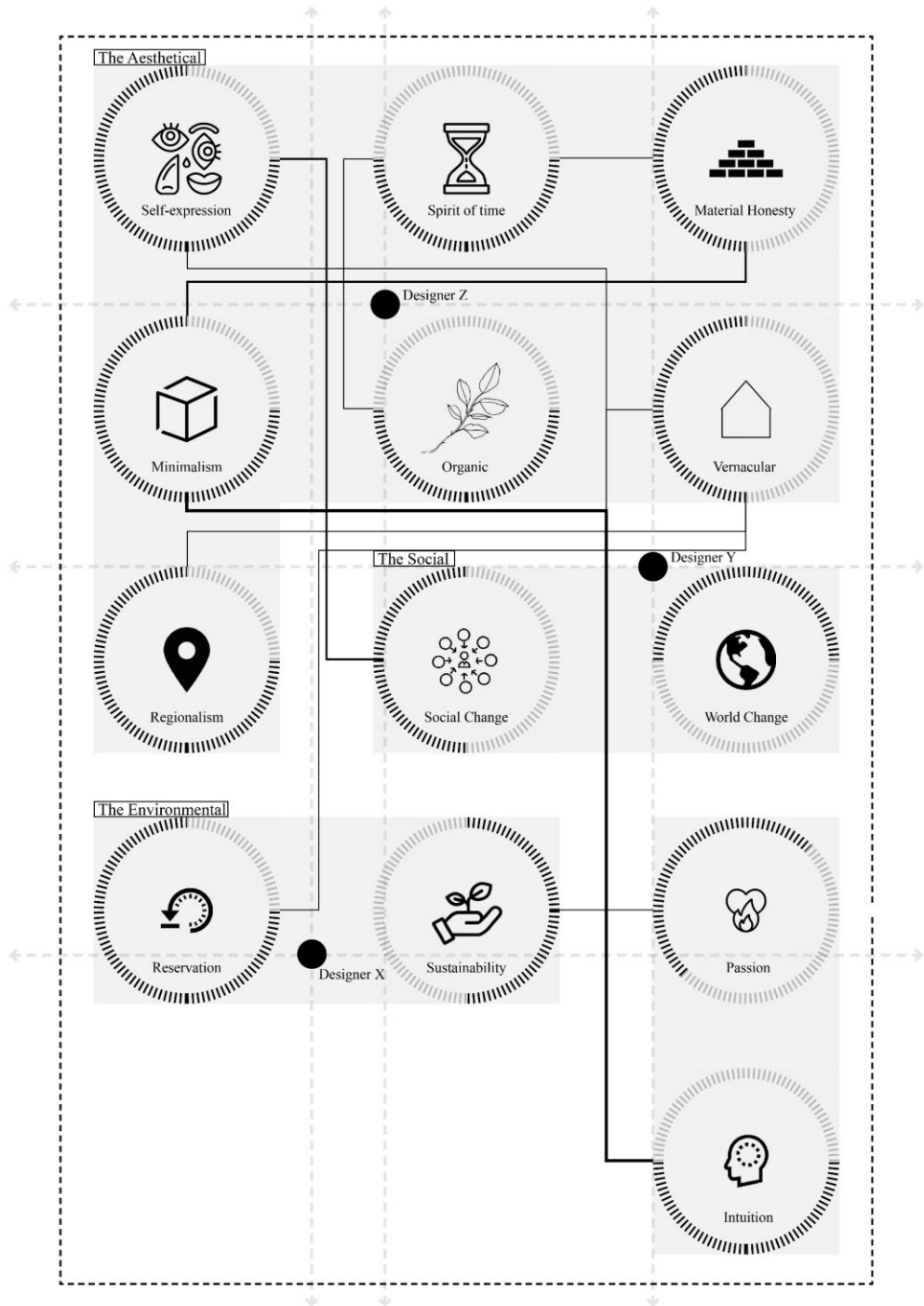
Figure 3.32: (by author) Summary of the Design Values Perspectives

Note that these values are not limited to time and space and can be traced from academia to profession (Lawson, 2006). In addition, these perspectives on design values are a matter of an integrative spectrum. Thus, these perspectives are not boundary-defined or exclusive to one perspective autonomously.

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First, by aesthetical values, Holm (2006) referred to the design values that are concerned with the aesthetical lens on which design projects or products are being viewed. This view is largely impacted by various points of view.[28] First, aesthetical values can be established and recharged by key design movements such as modernism, postmodernism, deconstructivism, and many more.

Second, these values can be traced back to main reflections from predominant scenes from the art community that found their way to architectural ends.

Third, the influence of technological advancements and societal changes that allowed many individuals to experiment with their expressions and personal aesthetic approaches such as scholars, architects …etc. (Krieger, 2004; Steer, 2004; Flores, 2004; Holm, 2006). From this departure, some of these aesthetical design values are described in table 3.8.

Table 3.8: (by author) The Aesthetical Design Values in Architectural Design.

| Aesthetical design value | Major notions |
| --- | --- |
| **Artistic self-expression** | -The aesthetical form is a product of the intuitive and creative imagination. (See Gelernter, 1995) |
| **Expression of the zeitgeist** | -Each period in time (an era, a decade…etc.) sort of has a common expression of its artistic creations, attitudes, and intellectual and cultural scene. (Gelernter, 1995; Holm, 2006; Hume, 1965) |
| **Structural, Functional and Material honest representations** | -Structural honesty in representation can be considered a value traced back to the days of the Romans and Greeks and the works of Vitruvius in which architecture relates to its structural content. (Brolin, 2000)<br>-Material honesty can be seen, in earlier theories, in the works of Carlo Lodoli in that the properties of materials, their opportunities, and their capacities should be valued by designers. (Kaufmann, 1955; Williamson, 1998; Brolin, 2000) |

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[28] Since this view is mostly subjective in nature, aesthetical design values are often mixed with aesthetical design styles. In this case, the means are not the same as the ends, while stylistic notions of these design movements usually indicate the means or the actions, it is often up to values to provide an ultimate goal or a framework of reference on why these actions and styles happened.

| | |
|---|---|
| | -Honest functional representations, as a value, refer to the user's needs, the climate conditions, and the community aspirations that are waiting to be represented by the designer. (Holm, 2006; Gelernter, 1995) <br> -This can be traced back, in architectural education, to the experimental workshops at Bauhaus and it translated into today's schools of architecture. (For example, Southern California Institute of Architecture (SCI-Arc)). (See Whitford, 1984) |
| **Minimalism** | -For Pawson (1996), simplicity and minimalism are concerned with synchronization, purpose, truth, and a moral construct that denies any excessive intentions. |
| **Nature and its relation to the organic** | -According to Aldersey-Williams (2003), adapting a nature-aesthetical value can be categorized based on three: <br>    a. Symbolic references to nature in architectural design. <br>    b. The function is appropriated in nature's forms. <br>    c. The objects in nature where the previous can be deducted. <br> -Form follows the flow. (Pearson, 2001) <br> -Often associated with environmental values. (Holm, 2006) |
| **The vernacular aesthetics** | -The everlasting principles of design that are not time-limited and can "ensure that everyone will appreciate its timeless beauty and that everyone will understand immediately how to use it" (Gelernter, 1995, p.15) <br> -Vernacular aesthetics can be site, climate, and region sensitive. (Heynen,2004; Gelernter & Dubrucq, 2004) |
| **Values of Regionalism** | -Assumed as the correlation and harmony between the built environment and the mere characteristics of that environment. (Gelernter & Dubrucq, 2004) <br> -The local environment of the designed environment. (Abel, 1997; Holm, 2006) |

Second, the social values, in architecture and architectural design education, are mostly concerned and derived from societal challenges, reflections, opportunities, and limitations. Here, under the spectrum of social values, some values such as social change and responsibility or the considerations of the challenging contexts of societies both on local and international scales can be revealed.

Several points of view discussed its interpretation of social change as a value in design. These points of view include:
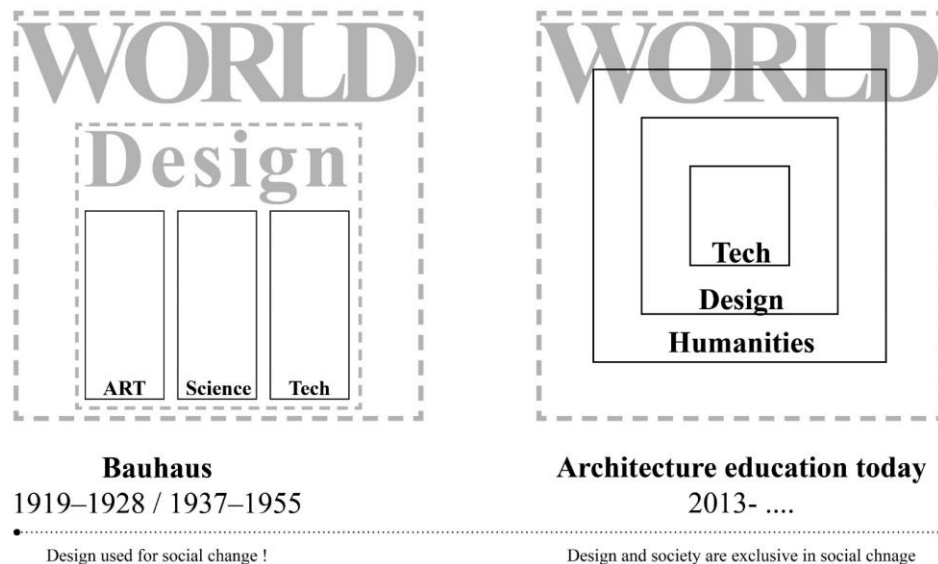
Figure 3.33: Social Change in Bauhaus and Today's Architectural Education
(Adapted from NEST by De Walsche (2016a, P.22); Findeli (2001, P.8))

- An educational perspective, in which approaches to social change and responsibility was most evident in the learning culture of the German Bauhaus, as directed by Walter Gropius (Hughes & Walsh, 1991). But, instead of using design, as a stand along paradigm for social change, today's architectural education, in its probable cases, brought back social change in a parallel situation with design and technology (Figure 3.33).

- The scholarly works of Victor Papanek in which he called upon designers, in his works industrial designers, to address social change through the adaption of a more compassionate problem-solving approach towards the society's they designed for (See Davey, Cooper, et.al, 2002).

Third, the design values that are environmentally based rely on, the predominant and generic aim, that everything in nature and nature-related must be protected or considered for its valuable and intrinsic worth. This places, what Thompson (2000) or Wheeler & Beatley (2014) mentioned as, a sort of stewardship or responsibility of

what is built and designed on the environment today and its transcendence and effect on future generations.
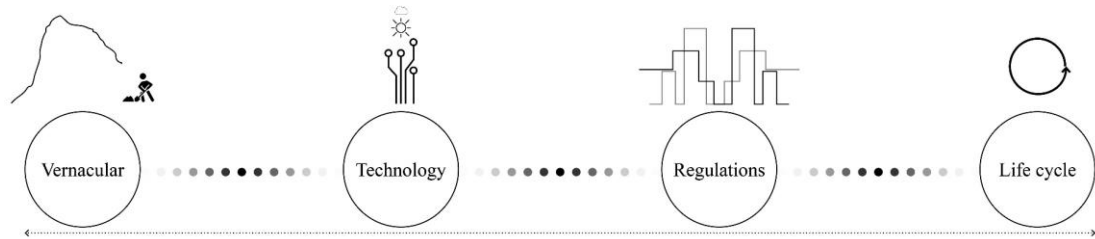


Figure 3.34: (by author) Directions of the Environmental Design Values (Cuff, 2000)

Here, the environmental design values can be categorized, based on Cuff (2000), into four directions. These directions include (See figure 3.34):

- The more conventional and ecological environmental values that rely on vernacular techniques and skills. This indicates a deeper view of the vernacular design values discussed as aesthetical values.

- What Cuff termed, "environmental technology" in which environmental issues and considerations are supported with digitalized and technological aids and tools.

- What Mcdonald (2004) referred to as the "cradle-to-cradle" approach that takes the entire life-cycle of the building from pre-construction, to construction, to its use and inhabitation and finally it's presumed ending in destruction or re-use.

- The nationwide environmental aids that reflect the city's environmental considerations, regulations, or procedures for the built environment. These include the use of renewable resources, the recycling of used materials, or sustainability practices among many more.

Environmental design values, under these directions, can be further represented by other sub-values. One of the most important or influential of these sub-values is what is known as Green or sustainable design. Mcdonald (ibid) noted that being sustainable in design is considering the benefits and the protentional that the site or its climatic conditions have to offer to the designed or built environment.

This environmental thinking was even evident in the Vitruvian assertion[29] that "on-site resources such as proper orientation, thermal mass, shading, ventilation, and local construction materials" should be considered for a more environmental correlation with the designed environment (Ibid, p.1280).

The relevance or the attention towards more sustainable design was even more intensified with the presumed peak of the industrial revolution. With the rise of overcrowding, pollution, public health issues, and poorly tolerant infrastructures, such environmental design values were needed and appreciated by many designers, architects, and most importantly urban planners (Beatley & Wheeler, 2004).

Indeed, within the med 20th century, and the rise of modernism, several environmental aspects were predominantly considered such as passive solar heating, the use of sunlight more efficiently in designed interiors, or consideration for energy consumption. Margolin (1995) even referred to the period as a shift from highly aesthetical to a more durable and well-thought-out environment.

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[29] Mcdoland (2004) observed that environmentally-considered values where evident and elaborated in the *Ten Book on Architecture* of Vitruvius.

# Chapter 4

# DATA COLLECTION AND FINDINGS

## 4.1 Architectural program in the Department of Architecture of EMU

The architectural program in the DoA of EMU follows a four-year program that pledges students into design and evaluation of the built environment. The program contains three major categories of courses.
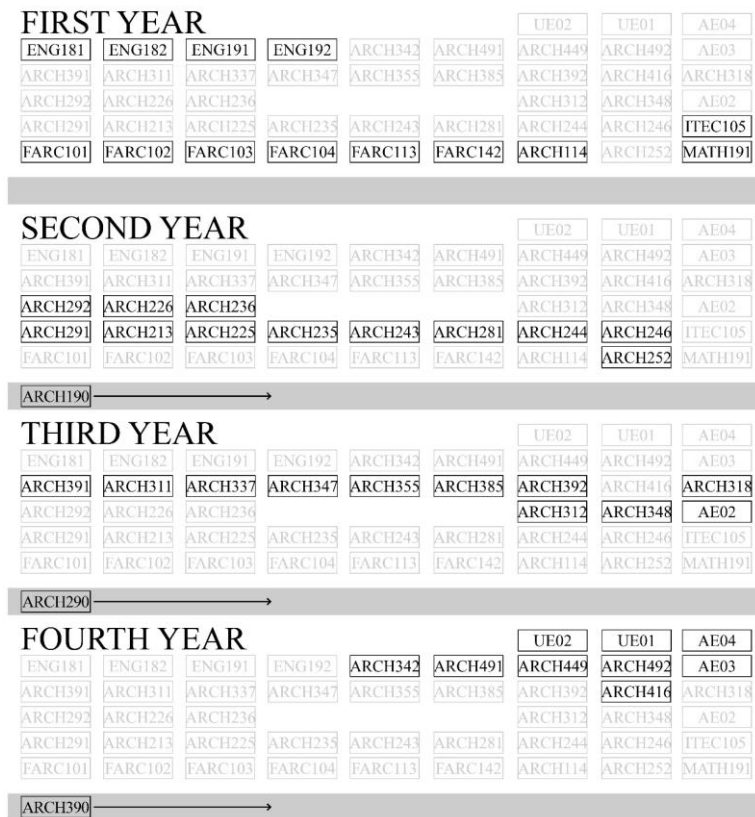


Figure 4.1: (by author) Architectural Curriculum in DoA of EMU Showing a Progression in Complexity and Scope.

First, elective courses in which students can arrange and adapt their orientations in the curriculum by choosing which courses seem more fit to their learning journey. In addition, these courses allow students to expand their knowledge spectrum to even non-architectural courses that can be taken in other departments.

Secondly, architectural students are provided with mandatory professional and theoretical courses that deal with important architectural theories, historic narratives, or professional requirements for the field of practice.

Lastly, the architectural program in EMU, like any other architectural program, relies mostly on studio-based learning. The design studios in EMU, mainly are integrative and pedagogically enriched spaces that are based on critical thinking and the integration of society, environment, and technicality through project-based learning. Table 4.1 summarizes the curriculum of the undergraduate architectural program in the DoA of EMU.

Table 4.1: (by author) The Curriculum of the Undergraduate Architectural Program in DoA of EMU[30]

| Course [31] | Course description[32] |
|---|---|
| **Year 1** | |
| **Basic Design Studio (FARC101)** | The purpose of this course is to develop a visual language of design, which includes geometry's qualities, basic design principles, creative impulses, and critical thinking. Another significance of this course is to develop mental-experimental abilities within the design process. |

[30] As declared on the department's main website. For more information or details please visit, https://www.emu.edu.tr/en/programs/architecture-undergraduate-program/880?tab=curriculum.

[31] There are other non-architectural courses in which students must take through the program, these include: English language courses, basic Mathematics, computer and information technology (IT) basics and Turkish language courses.

[32] These are considered theoretical and planned descriptions that may be, in its actual context and practices, partially adapted, slightly changed or developed to fit certain circumstances. Thus, these descriptions are generic overviews of what the course might address.

| | |
|---|---|
| **Introductory Design Studio (FARC102)** | The development of a design process that focuses on volumetric manipulation, the relation between space, function, material, and structure, and the importance of context. (Realistically-manifested problems) |
| **Graphic Communication - I (FARC103)** | This course introduces students to the basics of visual communication and a variety of representational approaches. |
| **Graphic Communication - II (FARC104)** | More developed representational and visual communication approaches (which include 3D drawings and drawing media) |
| **Introduction to Design (FARC113)** | Develop a basic framework for design with the introduction of definitions, principles, and the design process. (Abstract problems) |
| **Introduction To Design Technology (FARC142)** | History of design technologies, materials, and structure |
| **Human and Socio-Cultural Factors in Design (ARCH114)** | Introduces students to the role of humans and the importance of social and cultural forces in the architectural design process. |

**Year 2**

| | |
|---|---|
| **Architectural Design Studio - I (ARCH291)** | -The focus on form, function, and space through project-based assignments. <br><br> -Minimal consideration of structure in favor of creative impulses. <br><br> -Extending the design process to include site considerations, program, and human and social influences. <br><br> -Projects proposed are of limited to simplified complexity. |
| **Ecological Issues in Architecture (ARCH213)** | A base for a more environmentally-responsive architectural curriculum through the consideration of two scales: the scale of the site and the urban fabric of a city. |
| **History and Theories of Architecture - I (ARCH225)** | A survey on the architectural historic narrative and evolution from the pre-historic times to the medieval period. <br><br> -Survey-based course. |
| **Introduction to Tectonics of Structural Systems (ARCH235)** | Developing an understanding of the architectural use of structure. Basics of structural systems and tectonics in architecture. <br><br> -Case-studies based |
| **Architectural Construction and Materials - I (ARCH243)** | Tectonic aspects of the architectural product that include materials and structural elements. |
| **Computer-Aided Design - I (ARCH281)** | Introduction to the principles and applications of CAD. |
| **Summer Practice - I (ARCH190)** | This includes field trips, surveying practices, or organized workshops. (Minimum of 17 working days) |

| | |
|---|---|
| **Architectural Design Studio - II (ARCH292)** | -The focus on form, function, and space through project-based assignments.<br><br>-Projects proposed are mildly complex.<br><br>-Focus on climatic conditions of the site, construction details, materiality…etc. |
| **History and Theories of Architecture - II (ARCH226)** | Covers the history of the architectural narrative in Europe, Asia, and America from the rise of the Renaissance to the end of the 20<sup>th</sup> century.<br><br>-Survey-based course. |
| **Tectonics of Flexural Structures (ARCH236)** | -The course focuses on structural behavior, methods, and tectonics that address the flexibility of structures.<br><br>-Case-studies based. |
| **Architectural Construction and Materials - II (ARCH244)** | Provides students with knowledge of construction methods of several architectural elements. |
| **Energy and Environmental Issues in Design (ARCH246)** | Develop students' awareness of the influence of environmental factors on architectural design. |
| **Theory of Urban Design (ARCH252)** | Introduction to urban historic narratives and issues. (Relates architecture with urban design) |

**Year 3**

| | |
|---|---|
| **Architectural Design Studio - III (ARCH391)** | -The focus on design concepts with urban considerations through project-based learning.<br><br>-Projects proposed are interactive and sensitive to social, environmental, and contextual factors. |
| **Principles of Conservation and Restoration (ARCH311)** | Provides students with the knowledge of architectural and cultural heritage and conservation. |
| **Tectonics of Form Resistant Structures (ARCH337)** | -Introduces students with the understanding of the relation between structural behavior, tectonics, and challenges in structural systems.<br><br>-Case-studies based. |
| **Architectural Construction and Materials - III (ARCH347)** | Provides students with knowledge of more advanced construction methods of several architectural elements. |
| **Process of Urban Design (ARCH355)** | A theoretical approach to urban design and its importance in architectural design. |
| **Digital Communication in Architecture (ARCH385)** | Provides students with the ability to fully render and represent their projects through 3D digital modeling platforms and tools such as BIM, 3D Max, or photoshop. |

| | |
|---|---|
| **Summer Practice - II (ARCH290)** | Includes training at a construction site with a minimum of 25 working days. |
| **Architectural Design Studio - IV (ARCH392)** | Students are introduced to highly complex projects that require urban, functional, environmental considerations, taking into mind building codes and regulations. |
| **Architecture and Design Theories (ARCH312)** | -Survey-based course.<br><br>-Variant architectural theories that depend on the instructor's choices. (Theories not discussed in other survey-based courses. |
| **Building and Environmental Systems in Architecture (ARCH348)** | Raises awareness among students on environmental systems in the building such as water supply, energy systems…etc. |

| **Year 4** | |
|---|---|
| **Working Drawing (ARCH342)** | -Develop the students' abilities to produce computer-supported shop drawings.<br>-Profession -associated course. |
| **Architectural Design Studio - V (ARCH491)** | -The focus on projects with complex structural systems and rich architectonics qualities. |
| **Economic and Managerial Issues in Architecture (ARCH449)** | A managerial view of architectural design to develop construction management skills and abilities. |
| **Summer Practice - III (ARCH390)** | Practice in an architectural office for a minimum of 25 working days. |
| **Architecture Graduation Project (ARCH492)** | Students demonstrate their competence and performance in dealing with architectural design in all its aspects from macro to micro scale issues. |
| **Professional Issues in Architecture (ARCH416)** | This course reflects professional responsibilities and ethical concerns that graduate students will face upon their integration into the professional field. |

## 4.2 Research rationale

### 4.2.1 Sample size and description

To take the students' perspective in understanding studio culture in the architectural design studios in the DoA of EMU, a sample size of 100 architectural students in architectural design studios was determined as a sample size threshold to be tested later on for its reliability and creditability when the data are collected. For such goal, the sampling size was focused on and limited by architectural students in their:

- *second year of their architectural program*. This includes all students who are inculcated in studio courses ARCH291 (Architectural Design Studio – I) and ARCH292 (Architectural Design Studio – II)

- *third year of their architectural program*. This includes all students who are inculcated in studio courses ARCH391 (Architectural Design Studio – III) and ARCH392 (Architectural Design Studio – IV)

- *fourth year of their architectural program*. This includes all students who are inculcated in studio courses ARCH491 (Architectural Design Studio – V) and ARCH492 (Architecture Graduation Project)

Based on the limitations specified in Chapter 1, students in their first year who are inculcated in studio courses FARC101 (Basic Design Studio) and FARC101 and FARC113 (Introduction to Design) will be excluded from the targeted sample. This sampling limitation came as a result of:

- The research is limited to architectural students in their architectural design studios. In the architectural program in the DoA, first-year studios are offered to interior architecture and architecture students combined.

- First-year students are, to an extent, considered novices into the practices of the studio (Lawson, 2006; Goldschmidt, et.al, 2010). Thus, they may not have yet possessed a comprehensive understanding of the studio's learning experience as they are still exploring its potential and opportunities.

## 4.2.2 Design of the Self-Administrated Questionnaire (SAQ)
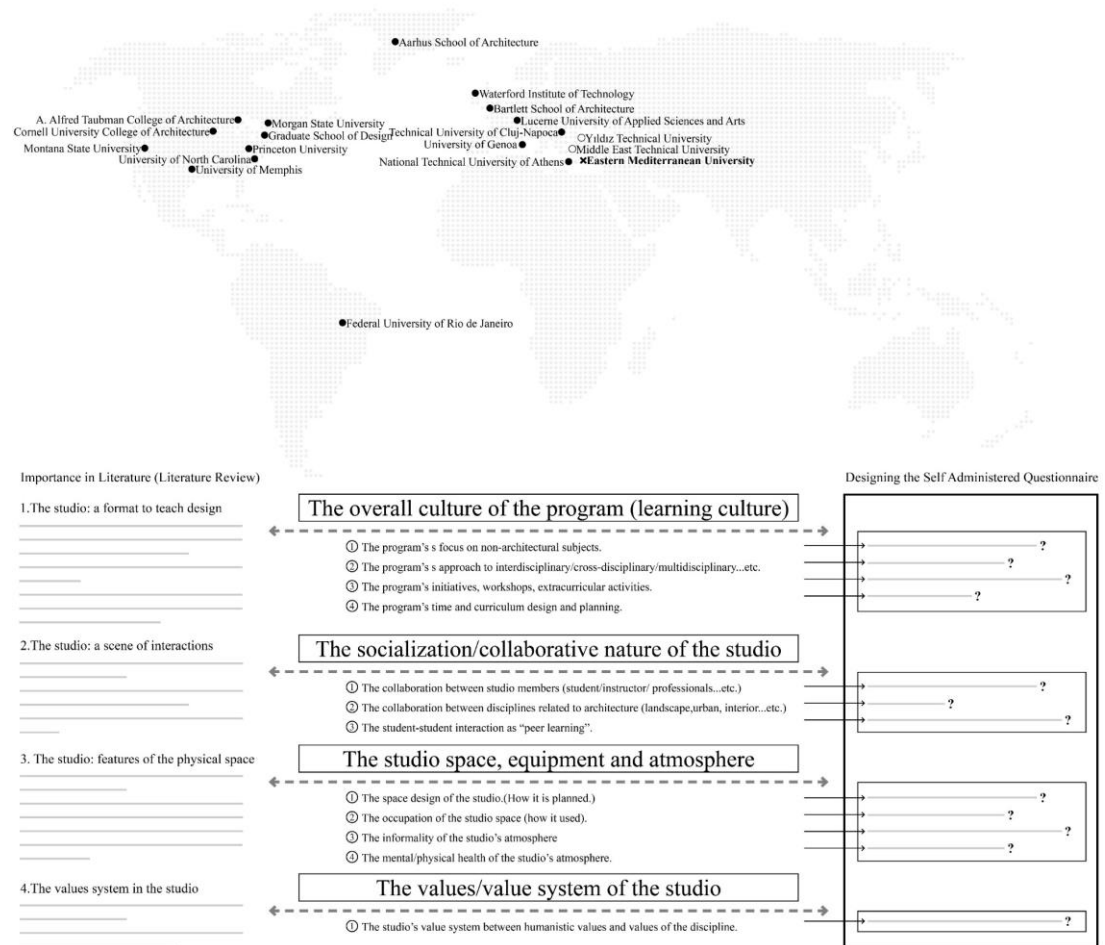


Figure 4.2: (by author) Concluded Parameters to Guide the Understanding of the Studio Culture in the DoA of EMU

The overview of the schools of architecture provided the base on which the understanding of studio culture within the architectural studios in the DoA can be built upon. In addition, through the literature, several models and frameworks were already interpreted on the importance of the studio and what constitutes its predominant elements.

For instance, the generic modeling of the studio as a learning culture that is characterized by its physical space, its cultural dimension, or its pedagogical activity

proposed by Crowther (2013) and the model developed by Shaffer (2003) describing the studio as the intersection of its pedagogical elements, its epistemology elements, its furniture arrangement, and physical space and its community-like interactions.

As a result, four synthesized parameters were placed as a guide for the design of the SAQ and were assumed as the viewpoints in which an understanding of studio culture within the case of the architectural design studios of EMU might be recognized (See figure 4.2). These four parameters are:

1. the overall culture of the program and its pedagogical perspectives.
2. the socialization/collaborative nature of the studio.
3. the studio space, equipment, and atmosphere.
4. the values/value system of the studio.

Figure 4.3 shows the questionnaire used for this study and its relation to the proposed parameters synthesized. The final draft of the Self-Administrated Questionnaire can be found in Appendix A.

Figure 4.3: (by author) Questionnaire Used for Data Collection and its Interrelated Segments

### 4.2.3 Ethical considerations

To collect data from the determined sample of students using the Self-Administrated Questionnaire, the research complied and followed the procedure set forth by the Research and Publication Ethics Board in Eastern Mediterranean University. To fully incorporate these ethical considerations, the following measures were taken into consideration:

- All participants are provided with a brief description of the research both verbally and in written form, clarifying some key definitions and the main aims and objectives of the study.

- The questions included in the self-administrated questionnaire are clearly stated, no personal or private questions or information are involved and the volunteers have the right to not answer any question which is deemed uncomfortable or unsuited.

- All participants are legal adults who are above the age of 18 years old.

In addition, Consent forms were attached with each distributed questionnaire. Before answering the questions and participating in the survey, all prospective participants were required to provide their signatures. These consent forms signified and made sure that the participation is voluntary and each participant has the right to withdraw from the study at any time without any questions or consequences (See appendix B).

Before the data was collected, approval of the board was obtained that confirmed the questionnaire as ethically considered and, in such case, can be used for this study and in the process of collecting data (See appendix C).

## 4.3 Methods

Before initiating the data collection phase, the questionnaire was further reviewed, assessed and approved, for its questions and methodological approach, by some professional experts in the field of architecture, architectural education, and educational research. As a result, three professionals contributed to these aspirations, this included two professionals in the field of architecture and architectural education from the DoA and one professional from the Department of Education of EMU.

To initiate the data collection, the reviewed and approved questionnaire was distributed both in online and traditional handout methods in the intended studios and other venues in the DoA of EMU. In total, 133 questionnaires were distributed of which 100 responses were returned and collected for analysis.

Taking the design of the questionnaire into account, the collected data was divided into two. First, the Likert scale questions were uploaded and organized using SPSS 26 software.
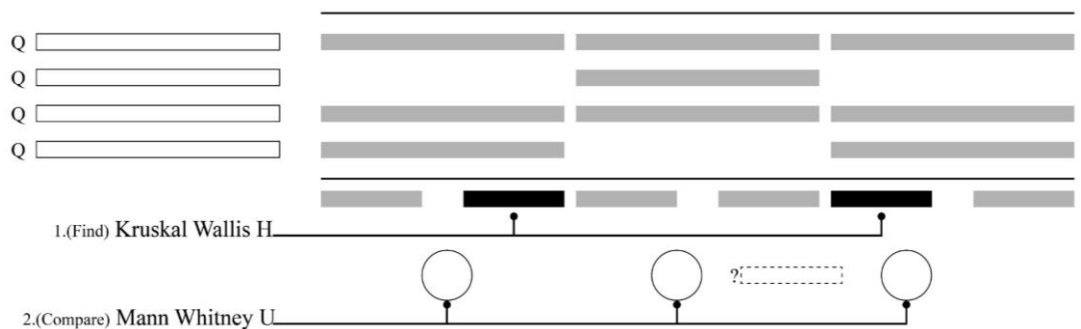


Figure 4.4: (by author) The purpose of Using Kruskal Wallis H and Mann Whitney U Tests

For these data, quantitative methods through frequencies, descriptive statistics, Mann-Whitney U, and Kruskal-Wallis H tests will be used to evaluate the results and find

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and compare, within the grouping variables, any statistically significant data among the results obtained[33] (Figure 4.4).

Furthermore, to test the validity and the reliability of the quantified data collected, two tests were used. First, a Cronbach's Alpha test was used to test internal consistency and how the collected responses are interrelated and consistent (Cortina, 1993).
Second, a Confirmatory Factor Analysis (CFA) using Structural Equation Modeling (SEM) was used to test the construct validity of the synthesized parameters and their relation to the collected data.

For Beran, & Violato (2010), SEM represents a statistical approach to figure out the relationship between the sets of the collected data and its assumed variables. In this study, CFA using SEM was used to test the relationship between the variables based on the data collected.

Secondly, the questions with open-ended responses were separated to be analyzed through qualitative methods using thematic analysis through indexing (Löfgren, 2013).

The following table shows the coding system used in defining the variables or the questions used in the questionnaire in SPSS and within the reported results.

Table 4.2: (by author) The Coded Variables as Specified in SPSS

| Variable in questionnaire | Variable in SPSS | Coding instructions |
| --- | --- | --- |
| **Design studio level** | DSL | Numbers assigned to each survey |

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[33] For the purpose of this study, the data were evaluated and interpreted at the 95% confidence interval and at the $p < 0.05$ significance level.

| | | 2: 2nd-year design studios (ARCH 291/292) |
| --- | --- | --- |
| | | 3: 3rd-year design studios (ARCH 391/392) |
| | | 4: 4th-year design studios (ARCH 491/492) |
| **Learning culture** | **LC** | |
| **Time management** | LC1 | Response from 1 to 5. From |
| **Verbal communication** | LC2 | 1: strongly disagree |
| **Critical thinking (Abilities to analyze problems and propose solutions to these problematic situations)** | LC3 | 2: Somewhat disagree<br><br>3: Neutral |
| **Relation of the design studio's tasks to the program's extracurricular activities.** | LC4 | 4: Somewhat agree<br><br>5: strongly agree |
| **Extracurricular activities** | EA | Multi-response question with a level of agreement for each:<br><br>1: Yes, 2: No<br><br>EA1: Architectural tutoring and teaching<br><br>EA2: Mental health awareness<br><br>EA3: Entrepreneurship and management<br><br>EA4: Debates<br><br>EA5: Technological representation tools<br><br>EA6: Others (with open-ended responses) |
| **Informal interactions of the studio** | **IN** | |
| **Interactions with other students** | IN1 | Response from 1 to 5. From |
| **Interactions with instructors in the pedagogical events of studio** | IN2 | 1: strongly disagree |
| **The instructor as a role model in the studio's interactions** | IN3 | 2: Somewhat disagree<br><br>3: Neutral |
| **Interaction with teaching assistants is less stressful** | IN4 | 4: Somewhat agree |

| | | |
|---|---|---|
| **Interaction with a teaching assistant in the development of the projects in the studio** | IN5 | 5: strongly agree |
| **Values in the design studio** | **VA** | |
| **Social design values (locally in Cyprus) in the discussions of the studio** | VA1 | Response from 1 to 5. From |
| **Social design values (internationally in the world) in the discussions of the studio** | VA2 | 1: strongly disagree<br><br>2: Somewhat disagree |
| **Environmental design values within the proposed projects** | VA3 | 3: Neutral |
| **Aesthetical design values (Creative critical thinking)** | VA4 | 4: Somewhat agree<br><br>5: strongly agree |
| **Aesthetical design values (Confidence and self-expression)** | VA5 | |
| **Physical space of the studio** | **PS** | |
| **The arrangement and layout of the studio's desks** | PS1 | Two parts:<br><br>1. Agreement on the existent layout of the studio's desks<br>1: Yes<br>2: No<br>2. Open-ended question (Thematic analysis) |
| **Additions or enhancements to the physical space of the studio** | PS2 | Open-ended question (Thematic analysis) |

## 4.4 Results

### 4.4.1 Quantification of the Likert scale data

Within the sampling size of 100 architectural students, the number of respondents for each year level varied. First, 24% of respondents were from 2nd-year architectural studios in studio courses ARCH291 and ARCH 292. Second, 42% of respondents were from students in their 3rd-year studios, those in ARCH 391 and ARCH 392. Lastly, 34% of respondents were students from 4th-year studios which included students in studios ARCH 491 and ARCH 492.

**Respondents**
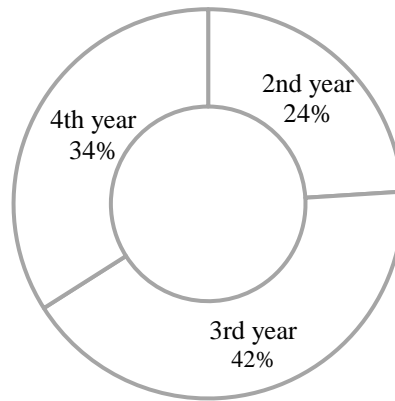


Figure 4.5: Percentage of the Number of Respondents for Each Year Level

To elaborate the responses, using the mean scores ($\bar{x}$) and the standard deviation ($\sigma$) are used as descriptive statistics to the responses that student respondents provided for each variable within the questionnaire. Tables 4.3, 4.4, and 4.5 demonstrate the mean scores and standard deviation for the responses for each variable according to each year level.

Table 4.3: Mean Scores and Standard Deviations for the Responses for Variables LC (1,2,3 and 4) According to Each Year Level.

| Questions (LC) | Studio level | n | $\bar{x} \pm \sigma$[34] |
|---|---|---|---|
| time management in the program (LC1) | 2nd year | 24 | **3.88 ± .992** |
| | 3rd year | 42 | **3.64 ± 1.008** |
| | 4th year | 34 | **3.65 ± 1.070** |
| | Total | 100 | **3.70 ± 1.020** |
| Verbal communication and collaboration | 2nd year | 24 | **4.21 ± .932** |
| | 3rd year | 42 | **3.83 ± 1.010** |

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[34] Note that mean scores refer to the average response of the groups (in this case the year levels) based on the Likert scale defined from 1 to 5 (1: strongly disagree to 5: strongly agree). Also, standard deviation is a statistical measurement that indicates the amount of variation between the set of responses and its mean score (Joseph, Dyer & Coolican, 2005).

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| | | | |
|---|---|---|---|
| (LC2) | 4th year | 34 | **3.71** ± 1.088 |
| | Total | 100 | **3.88 ± 1.028** |
| Critical thinking | 2nd year | 24 | **3.96** ± .955 |
| (LC3) | 3rd year | 42 | **3.76** ± .906 |
| | 4th year | 34 | **3.79** ± 1.038 |
| | Total | 100 | **3.82 ± .957** |
| Relation of the studio with extracurricular activities | 2nd year | 24 | **3.75** ± .847 |
| | 3rd year | 42 | **3.55** ± .993 |
| (LC4) | 4th year | 34 | **3.44** ± 1.133 |
| | Total | 100 | **3.56 ± 1.008** |

n: number of respondents  $\bar{x}$: mean scores  σ: std. deviation

Table 4.4: Mean Scores and Standard Deviations for the Responses for Variables IN (1,2,3,4 and 5) According to Each Year Level.

| Questions (IN) | Studio level | n | $\bar{x} \pm \sigma$ |
|---|---|---|---|
| Student-student interaction in the studio | 2nd year | 24 | **4.46** ± .658 |
| | 3rd year | 42 | **4.05** ± .882 |
| (IN1) | 4th year | 34 | **3.62** ± 1.231 |
| | Total | 100 | **4.00** ± 1.015 |
| Instructor-student interaction | 2nd year | 24 | **3.88** ± 1.361 |
| (Strength of academic relation in desk review) | 3rd year | 42 | **3.83** ± 1.034 |
| | 4th year | 34 | **3.50** ± 1.108 |
| (IN2) | Total | 100 | **3.73** ± 1.145 |
| Instructor-student interaction | 2nd year | 24 | **3.96** ± .955 |
| (Role-modeling) | 3rd year | 42 | **3.64** ± 1.008 |
| (IN3) | 4th year | 34 | **3.62** ± 1.231 |
| | Total | 100 | **3.71** ± 1.076 |
| Teaching assistant-student interactions (less stressful) | 2nd year | 24 | **3.83** ± 1.204 |
| | 3rd year | 42 | **3.64** ± 1.008 |
| (IN4) | 4th year | 34 | **3.53** ± 1.107 |
| | Total | 100 | **3.65** ± 1.086 |

| | Studio level | n | $\bar{x} \pm \sigma$ |
|---|---|---|---|
| Teaching assistant-student interactions (in development of projects) (IN5) | 2nd year | 24 | **4.38** ± 1.013 |
| | 3rd year | 42 | **4.21** ± .871 |
| | 4th year | 34 | **3.68** ± 1.249 |
| | Total | 100 | **4.07** ± 1.075 |

n: number of respondents    x̄: mean scores    σ: std. deviation

Table 4.5: Mean Scores and Standard Deviations for the Responses for Variables VA (1,2,3,4 and 5) According to Each Year Level.

| Questions (VA) | Studio level | n | $\bar{x} \pm \sigma$ |
|---|---|---|---|
| Local social design values (VA1) | 2nd year | 24 | **3.38** ± 1.013 |
| | 3rd year | 42 | **3.52** ± 1.153 |
| | 4th year | 34 | **3.38** ± .817 |
| | Total | 100 | **3.44** ± 1.008 |
| International social design values (VA2) | 2nd year | 24 | **3.58** ± .881 |
| | 3rd year | 42 | **3.60** ± 1.014 |
| | 4th year | 34 | **3.06** ± 1.071 |
| | Total | 100 | **3.41** ± 1.026 |
| Environmental design values (VA3) | 2nd year | 24 | **3.88** ± .992 |
| | 3rd year | 42 | **3.88** ± .942 |
| | 4th year | 34 | **3.56** ± 1.160 |
| | Total | 100 | **3.77** ± 1.033 |
| Aesthetical design values (Creative problem-solving) (VA4) | 2nd year | 24 | **4.21** ± .721 |
| | 3rd year | 42 | **3.83** ± 1.102 |
| | 4th year | 34 | **3.56** ± 1.050 |
| | Total | 100 | **3.83** ± 1.025 |
| Aesthetical design values (Confidence in visual self-expression) (VA5) | 2nd year | 24 | **4.04** ± 1.160 |
| | 3rd year | 42 | **3.81** ± 1.194 |
| | 4th year | 34 | **4.06** ± 1.153 |
| | Total | 100 | **3.95** ± 1.167 |

n: number of respondents    x̄: mean scores    σ: std. deviation

To find any statistically significant variations between the average responses and in which group (year level) these variations exist, the Kruskal-Wallis H test has shown that a statistically significant variation exists in variables IN1, IN5, and VA2. Table 4.6 shows the results of the Kruskal-Wallis H test.

Table 4.6: Kruskal-Wallis H Test Showing Statistically Significant Variables Among the Variables Set.

| Variables | Kruskal-Wallis H | $P$ [b] |
|---|---|---|
| LC1 | 1.007 | .604 |
| LC2 | 3.551 | .169 |
| LC3 | .726 | .696 |
| LC4 | .811 | .667 |
| IN1 | 8.320 | **.016** |
| IN2 | 3.008 | .222 |
| IN3 | 1.506 | .471 |
| IN4 | 1.318 | .517 |
| IN5 | 7.648 | **.022** |
| VA1 | .549 | .760 |
| VA2 | 6.057 | **.048** |
| VA3 | 1.446 | .485 |
| VA4 | 5.487 | .064 |
| VA5 | 1.417 | .492 |

a. Grouping Variable: Design Studio Level      b. $P<0.05$

To indicate where is the variation, within the grouping variables, that show this statistical significance, the Mann-Whitney U test shows that these variables IN1 and IN5 are within 2nd year and 4th-year design studios. On the other hand, the test shows that Variable VA2 is statistically significant within 3rd-year and 4th-year design studios.

Table 4.7: Mann-Whitney U Test Comparing 2nd and 3rd-Year to Indicate the Significant Variation

| Test Statistics [a] (2nd year and 3rd year) | | | |
|---|---|---|---|
| Variables | IN1 | IN5 | VA2 |
| Mann-Whitney U | 374.500 | 411.000 | 493.000 |
| P [b] | .062 | .172 | .878 |

a. Grouping Variable: Design Studio Level    b. $P<0.05$

Table 4.8: Mann-Whitney U Test Comparing 3rd and 4th-Year to Indicate the Significant Variation

| Test Statistics [a] (between 3rd and 4th-year levels) | | | |
|---|---|---|---|
| Variables | IN1 | IN5 | VA2 |
| Mann-Whitney U | 583.500 | 542.000 | 509.000 |
| P [b] | .150 | .055 | **.026** |

a. Grouping Variable: Design Studio Level    b. $P<0.05$

Table 4.9: Mann-Whitney U Test Comparing 2nd and 4th-Year to Indicate the Significant Variation

| Test Statistics [a] (between 2nd and 4th year) | | | |
|---|---|---|---|
| Variables | IN1 | IN5 | VA2 |
| Mann-Whitney U | 242.500 | 259.500 | 290.000 |
| P [b] | **.006** | **.013** | .051 |

a. Grouping Variable: Design Studio Level    b. $P<0.05$

To summarize, table 4.10 shows the statistically significant data and its associated results within the Kruskal-Wallis H and Mann-Whitney U tests.

Table 4.10: Summary of the Statistically Significant Data

| Variables | Studio level | n | $\bar{x} \pm \sigma$ | P [a, b] | Difference [c] |
|---|---|---|---|---|---|
| IN1 | **2nd year** | 24 | **4.46 ± .658** | | |
| | 3rd year | 42 | 4.05 ± .882 | | |

| | | | | | |
|---|---|---|---|---|---|
| | **4<sup>th</sup> year** | 34 | **3.62 ± 1.231** | | |
| | Total | 100 | 4.00 ± 1.015 | .016 | **2<sup>nd</sup> year- 4<sup>th</sup> year** |
| IN5 | **2<sup>nd</sup> year** | 24 | **4.38 ± 1.013** | | |
| | 3<sup>rd</sup> year | 42 | 4.21 ± .871 | | |
| | **4<sup>th</sup> year** | 34 | **3.68 ± 1.249** | | |
| | Total | 100 | 4.07 ± 1.075 | .022 | **2<sup>nd</sup> year- 4<sup>th</sup> year** |
| VA2 | 2<sup>nd</sup> year | 24 | 3.58 ± .881 | | |
| | **3<sup>rd</sup> year** | 42 | **3.60 ± 1.014** | | |
| | **4<sup>th</sup> year** | 34 | **3.06 ± 1.071** | | |
| | Total | 100 | 3.41 ± 1.026 | .048 | **3<sup>rd</sup> year- 4<sup>th</sup> year** |

a. Grouping variable: Design studio-level      b. $P < 0.05$      c. Using Mann-Whitney U Test

Here, it can be observed that students' responses to Student-student interactions (IN1) are varying significantly between the 2<sup>nd</sup> year and 4<sup>th</sup>-year levels. The same can also be seen in the variable (IN5) in its concern in students' interaction with teaching assistants in developing their projects. In addressing international social design values in the studio's learning culture, reflected in the variable (VA2), a statistical significance can also be noted when comparing the average responses of 3<sup>rd</sup>-year students and 4<sup>th</sup>-year students. One thing to note here, in the variable questioning creative problem-solving within the studio's learning culture (VA4), there is a slight significance that didn't show on the tests.

Lastly, excluding the previously mentioned variables, the other variables questioned showed a steady average response within the studio's levels with no statistically significant variation. In addition, the questionnaire included multiple responses question related to the extracurricular activities which might be proposed or added to the learning culture of the architectural design studio within the DoA of EMU (Figure 4.6).

Architectural Tutoring and teaching
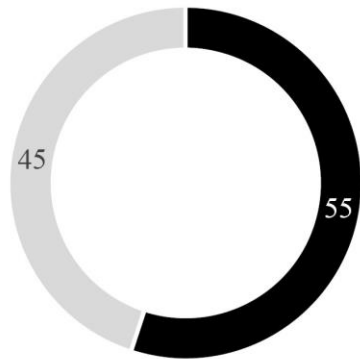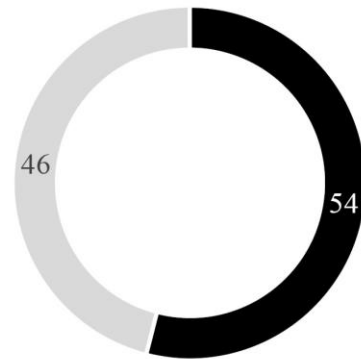
45

55

Mental health awareness

46

54

Entrepreneurship and management

22

78

Debates

13

87

Technological representation tools

26

74

Others

6

94
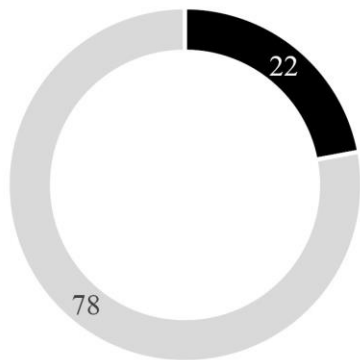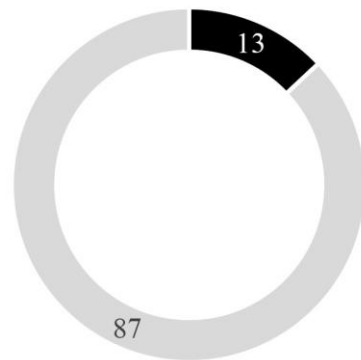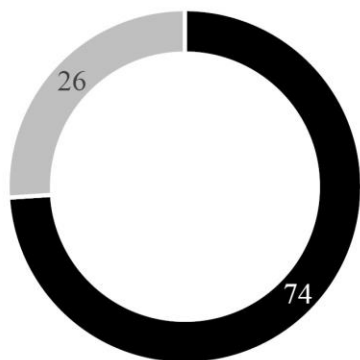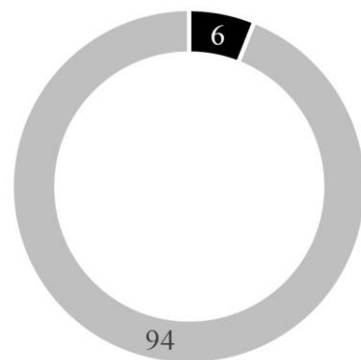
■ **To be added**  ▪ not to be added          ■ **To be added**  ▪ not to be added

Figure 4.6: Frequencies in the Extracurricular Activities to be Further Considered

### 4.4.2 Reliability and validity of quantified data

First, to test the internal consistency and interrelation of the responses provided by the students' sample of 100 participants, table 4.11 shows the results obtained from the Cronbach's Alpha test regarding the responses provided on the 14 questioned items under the three assumed variables LC, IN and VA. Looking at the table, and according to the interpretations in figure 4.7, the responses seem relatively high in internal validity as the values of Cronbach's Alpha range between 0.7-0.8.

Table 4.11: Cronbach's Alpha Indications to Test Internal Validity of the Responses Collected on the Questioned Items Under Variables LC, IN, and VA

| Variable | Questioned items | Cronbach's Alpha |
|----------|------------------|------------------|
| LC | 4 | 0.720 |
| IN | 5 | 0.705 |
| VA | 5 | 0.764 |
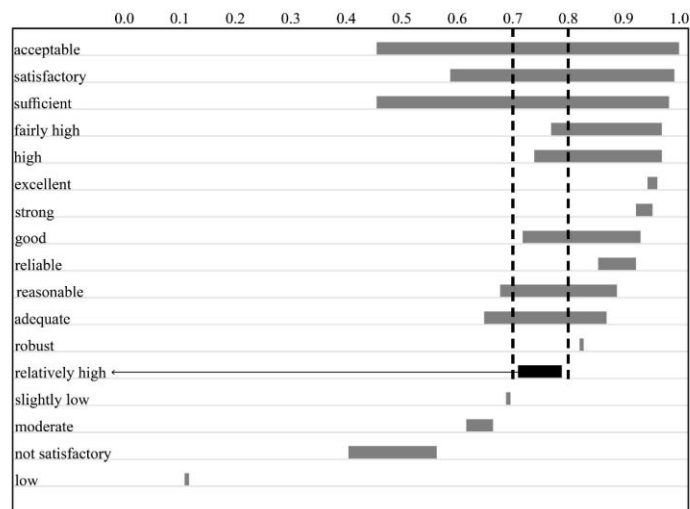


Figure 4.7: Description of the Values of Cronbach's Alpha as Noticed in Previous Educational Journals (Adapted from Taber (2018, p.1279))
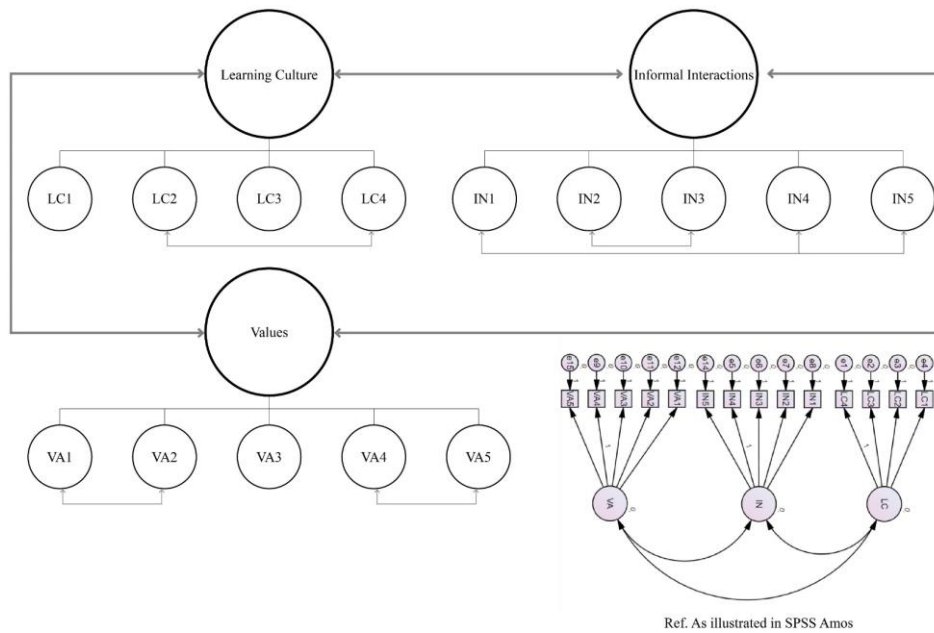
Figure 4.8: Confirmatory Factor Analysis Using SEM in AMOS for the Variables LC, IN, and VA and its Questioned Items

To support the previous internal consistency, a Confirmatory Factor Analysis was used to test the constructive validity of the parameters and how the reflections collected from students might provide a consistent understanding of its associated variables (Kline, 2015). Using SEM in AMOS, figure 4.8 shows the model used and constructed for this study.

Table 4.12: Results of the Fit Model Summary Showing the Indicated Values, its Threshold, and its Interpretation

| Indication | P-value | threshold | interpretation |
|------------|---------|-----------|----------------|
| CMIN/DF | 1.567 | 1-3 | Excellent |
| CFI | 0.944 | > 0.95 | Acceptable |
| SRMR | 0.075 | < 0.08 | Excellent |
| RMSEA | 0.076 | < 0.06 | Acceptable |
| P Close | 0.064 | > 0.05 | Excellent |

Based on the recommendations of Hu & Bentler (1999) and Gaskin & Lim (2016), the values of CFI, SRMR, and RMSEA can be a good combination to support the goodness fit of the model. This indicates that the responses collected from the 100 participants are, to an extent, acceptable in reflecting an understanding of the variables it represents.

Yet, it should be noted that these validity tests are predominantly momentary and non-fixed. According to Taber (2018), in academic research, it may be hard to test fixed internal consistency of reflections and attitudes through methods such as Likert scales by simply collecting repeated agreements. The reason might be the result of the ever-changing nature of human beings and their reactions to experiences that are mostly accompanied by slight rates of error and partiality.

### 4.4.3 Qualitative data and results
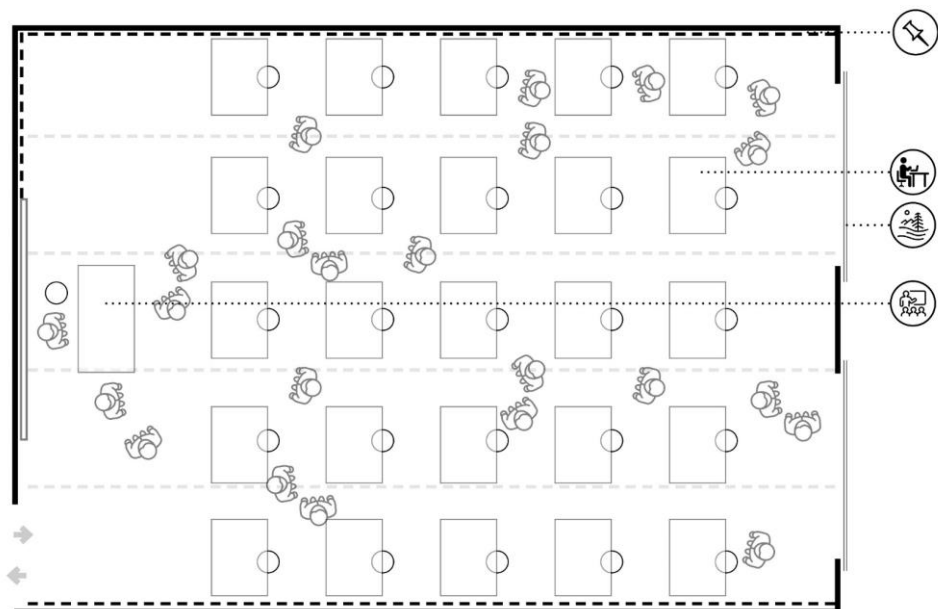
Figure 4.9: (by author) Assumed as Default Arrangement of the Desk Layout in Architectural Design Studios in DoA of EMU

The segment that is concerned with the variable focused on the physical space of the studio (PS) was designed with open-ended and reflective questions. The reason for such direction is to ensure that the celebration of the flexibility of the studio's space and its adaptability to different views and ways of learning design is still reflected through the open views of one of its participants (the students).

These questions required students to look into the physical space of the studio and reflect, through their answers, on two main questions. First, students were asked (PS1) to think of the arrangement and the layout of the studio's desks and if they think that the already placed arrangement should be altered (Figure 4.9). For the responses, 63% of students across all the categories (year levels) responded that the default layout and arrangement of desks in their perspective studio should not be changed while 37% agreed that such layout should be reconsidered.

Participants also provided a few reflections, those who answered yes to the reconsideration, on how the desk layout may be changed or reconsidered. One of the predominant themes that students collectively referred to is the collaborative assembly and arrangement of the studio's desks. Table 4.13 demonstrates some of the phrases mentioned within the students' responses that denote a predominant theme of collaborative layouts and arrangements that support collaboration.

Table 4.13: Phrases of the Participant's Responses on Variable PS1 that Reflect a more Collaborative Layout within the Studio's Physical Space.

| Questionnaire no. | Quoted responses that denote the theme of collaborative layouts. |
|---|---|
| 12 | "Groups of 3…" |
| 23 | "More gathered…" |
| 30 | "…and closer desks to allow better communication." |

| | |
|---|---|
| **46** | "A layout that brings us closer…" |
| **51** | "Closer to our classmates…" |
| **61** | "Close to classmates…" |
| **63** | "Right now, the desks are linear rows which prevent most interactions." |
| **71** | "…Instructor already knows how to improve or change arrangement or layout." |
| **80** | "…instead of an interactive space, it is becoming like a waiting space…" |
| **82** | "…it could be "U" shape of desks…" |
| **100** | "…maybe we have something like an office layout…" |

Second, students were given the freedom in the variable (PS2), from their points of view, to reflect on any additions or enhancements that should be introduced to the physical space of the studios they are occupying within their architectural studio courses.

Overall, 61 collected responses were analyzed and thematically categorized based on their repetitive patterns and frequencies. To further elaborate, table 4.14 shows assumed themes within the framework and its indication with the participant's responses

Table 4.14: (by author) Assumed Themes and their Indications within the Responses on Variable PS2

| Noted theme | Questionnaire no. | Indication in the responses |
|---|---|---|
| **Efficient use of studio's time** | **Repeated in most questionnaires** | -The comfortability in using the studio's furniture during the duration of its use.<br><br>-Storage spaces to use within the studio's spaces. |
| **Conditions of the studio** | **Repeated in most questionnaires** | -Maintenance of the studio's furniture.<br><br>-Infrastructure of the studio's space (provided electrical plugs, ventilation…etc.)<br><br>-The interior atmosphere of the studio (paint colors, lighting…etc.) |

| | | |
|---|---|---|
| **Personal customizations** | **Repeated in most questionnaires** | -Ability to add personal customizations to the working space. (Such as pinup boards or mood boards)<br><br>- Adjustability of the studio's furniture to fit various physical attributes. |
| **Supportive internal spaces within the studio** | **100/16** | - "…design corner for creation and model-making." |
| | **99** | - "…Coffee corner and bean bags." |
| | **84** | - "…visual examples for inspiration." |
| | **61** | - "…exhibition boards." |
| | **18** | - "…small scale library." |
| **Collaborative layouts** | **100** | - "…meeting tables that can be used for group works." |
| | **80** | - "…maybe a larger table inside for common use." |
| | **83** | - "…Bigger tables." |
| **Supportive external spaces within the faculty** | **97** | - "…new open spaces …where students can interact and work together with such as an outdoor patio or indoor agora… Woodcut lab, virtual lab, and model-making lab…" |

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# Chapter 5

# DISCUSSIONS

## 5.1 Studio culture narratives in the Department of Architecture of EMU

To establish an argument on the parameters that define a design studio culture and to answer the first research question concerned with the parameters that may define a studio culture in the case of architectural design studios in EMU, several models and frameworks were already established and interpreted throughout the literature on the particularities of the studio that may help to build up this argument.
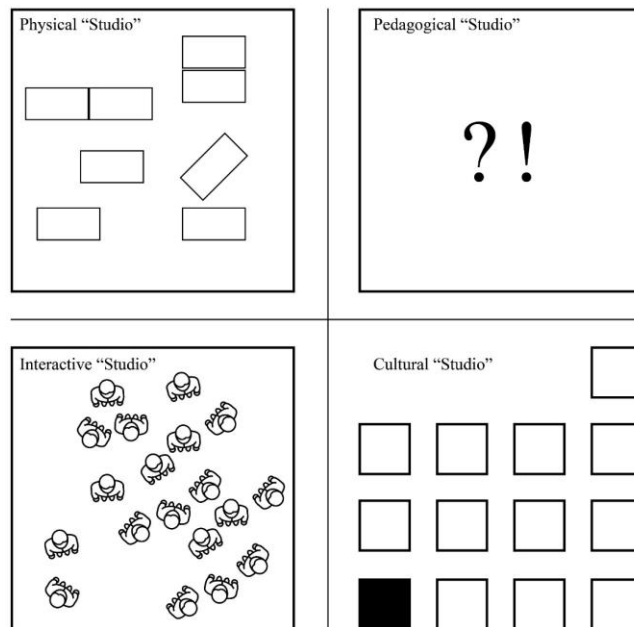


Figure 5.1: (by author) The different Views on the Learning Format of the Studio in Architectural Education (Crowther, 2013)

For instance, it was Crowther (2013) who generically modeled the studio as a learning culture that is characterized by its physical space, its cultural dimension, or its pedagogical activity (Figure 5.1).

In another, Shaffer (2003) developed a more detailed model in which it compromises the elements best suited to describe the design studio format. Shaffer noted that the studio format is composed of three main elements (See figure 5.2):



**Pedagogical activities**
- The practices of the studio such as crit sessions, juries or project-based tasks.

**Shallow Structures**
- Observable componants such as the space or the furniture
- Tools accessible by students and tutors

**Community of practice**
- Co-production of studio work through socialization between tutors and students.

**Episemological understanding**
- Beliefs that guide the studio's activities
- the nature of knowledge and how is it constructed

Figure 5.2: (by author) Model of Design Studio Pedagogy (Shaffer, 2003)

- The pedagogical elements which Grey (2016, p.272) referred to as the "instructional landscape of the studio" that is manifested through unique ways or activities of teaching and learning practiced by instructors and students Crowther (2013). noted that these teaching and learning practices are usually centered around knowing about design, to design, and being a professional designer[35].

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[35] The three notions regarding knowing about design, the ability to design and becoming a professional designer establish the base of what Shulman (2005) referred to as the *Signature Pedagogy* of the studio format.

- The elements of epistemology referred to the values system of the studio format, the aims of doing design studio activities, and the behaviors that are validated, rewarded, or progressed in the name of design acquisition (Shaffer, 2003; Grey, 2016).

- Apparent structures that referred to the physical and easily noticed and sensible elements of studio space (Grey, 2016). The space of the studio, furniture, and desk layout, or any tools or addition that are accessible or visible to studio participants are all examples of such elements.

- The elements of a Community of Practice in which the studio is seen as a social context of learning where a group of individuals, who share common interests of design, rely on being together and in interaction in the same space to develop their knowledge, skills, and expertise in architectural design (Lave &Wenger, 1991; Wenger, McDermott & Snyder, 2002; Wenger, 2011).

Yet, these elements of the studio are barely absolute within the definition of the studio's learning experience, Stevens (1998) added that the studio was merely a space where these characteristics overlap, integrate, or get applied in various degrees or forms to help in the upbringing of future architectural professionals.

It is worth mentioning that these elements, with a general comprehension, were even introduced within the AIAS report of the studio task force in 2002 in defining the parameters that compromise design studio culture. Table 5.1 shows the mentioned aspects within the report, its reflection with the model proposed by Shaffer (2003), and its indication of the parameters used to guide the understanding developed within this research.

Table 5.1: (by author) Relation Between the Parameters Synthesized in the Research and the Parameters Analyzed in the Literature

| Parameter within the research | Parameter within Shaffer's model | Parameter within the report | Prominent indications |
|---|---|---|---|
| **The learning culture of the program** | The pedagogical elements. | -Learning model of the design studio<br><br>-The design processes | -What is learned in the program both inside and outside the studio. (Pedagogical imprints)<br><br>-Focus on synthetic and critical thinking.<br><br>-The integration of the studio's processes with external activities and learning opportunities.<br><br>-Time management and its relations to the continuity of work in the studio.<br><br>-Importance of verbal communication within the studio's pedagogical activities to overcome uncertainty and ambiguity. |
| **The more informal interactions of the studio** | The elements of a Community of Practice. | The socialization/collaboration of the studio. | -The students-students, students-instructors, and students-others interactions<br><br>-This may also include interdisciplinary relations among participants that relate the studio with other disciplines.<br><br>-Interactions are based on respect, sharing and engagement, responsibility, and trust. |
| **The physical space of the studio** | Apparent structures of the studio. | The studio space, furniture, and atmosphere | -The space is an arena of exploration and experimentation.<br><br>-External spaces supportive of the studio within the faculty.<br><br>-The role of the studio's furniture arrangement in its |

| | | | ability to adapt activities and pedagogical practices. |
|---|---|---|---|
| **Design values in the studio** | The elements of epistemology | The shared values of the profession | -The end motifs of the student's learning pattern. |

Thus, four parameters can be placed while attempting to answer the first research question on defining the parameters that may help to initiate an understanding of studio culture in the architectural design studios in DoA of EMU.

The following figure demonstrates the proposed parameters and the resultant responses as varied across the design studio levels within the architectural studios in the DoA of EMU.

Figure 5.3: (by author) Understanding Studio Culture in the DoA of EMU Through the Proposed Parameters (Indicated by Results)
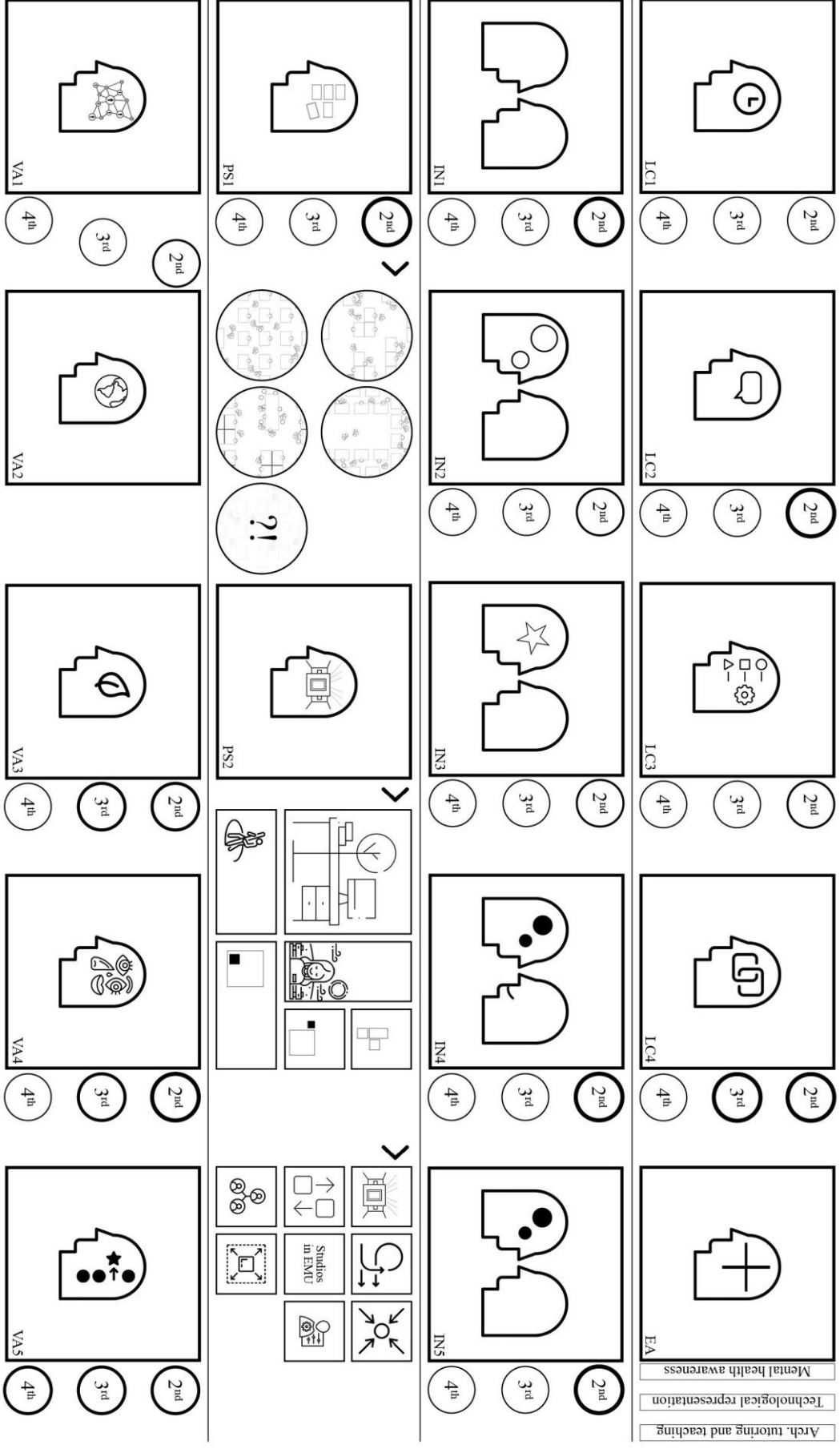
Under the learning program and its pedagogical imprints, the questionnaire, within variables LC1, LC2, LC3, and LC4, directed students to reflect on the architectural program both in its studio and non-studio courses. Students were asked about the role of the architectural program in EMU in accumulating: [1] time management skills and consideration, [2] verbal communication development, [3] critical thinking abilities, and [4] the strength of the relation between the studio and the extracurricular activities that are either in place or any other extracurricular activities they saw might be a good addition to the learning culture of the architectural program.
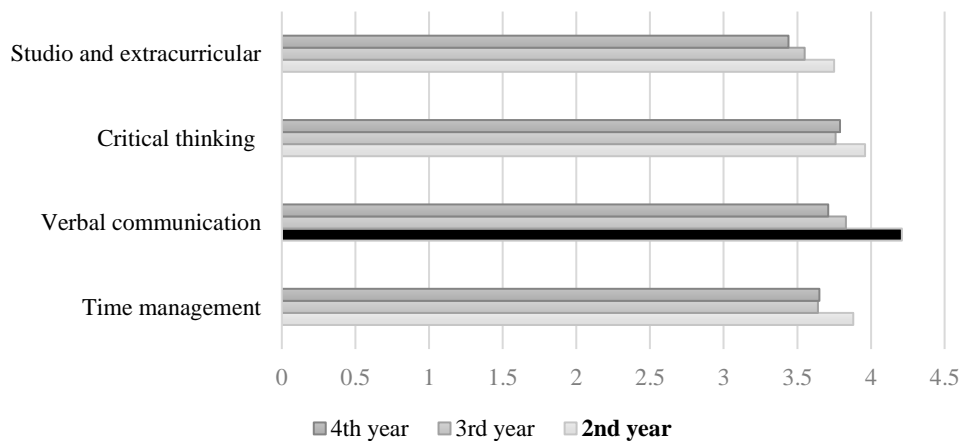


Figure 5.4: Results Showing Consistency in Agreement and Significant Indications in Second-year Studios (Highlighted in Black)

The results show that students, to an extent, do agree that the architectural program did indeed allow them to develop time management approaches and skills. This agreement was also directed towards verbal communication, critical thinking, and the studio's relation with extracurricular activities outside the studio.

Although second-year students show a slightly higher rate of agreement on all the variables, the results show almost no statistically significant variations between the

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studio levels. From a positive point of view, this shows consistency and overall agreement across all studio levels.

On one interesting result, students in their second-year studios almost strongly agree with the program's development of verbal communication compared to other students' responses in upper studio levels. As illustrated by Polatoğlu & Vural (2012), in showing student performance criteria set by MIAK or NAAB, verbal communication can strengthen the stage of knowledge acquisition that early students, those in second-year studios, ought to establish. To further elucidate the situation, Doidge, Sara & Parnell (2007) provided some guidelines to be considered by students to further develop their self-expression abilities, especially in second-year studios.

These aspects include several valuable self-expressing variables such as body language and bodily gestures, the tone of voice that includes a steady and controlled way of speaking, and the overall attitude of being confident and simply yourself. This indicates that within early studios in the program, such as the second year, the roots of accumulating verbal communication skills and approaches are essential. Here, verbal communication can have a huge role in considering a learning culture:

- That focuses on deliberations and discussions as a form of reflection in and on action within the process of the design task (Kvan, 2001a).
- Where students are, what Broadfoot, & Bennett (2003) assumed, present within their learning.

In addition, the results on what extracurricular activities should be added or may be considered for the architectural program, students across all levels[36] agreed on activities such as architectural tutoring and teaching, mental health awareness, and technological representation tools workshops (those in photoshop, 3D Max…etc.)

Also, among the category of others, students' responses included several extracurricular activities to be added, considered, or enhanced within the learning culture of the architectural program in DoA. These included: materials workshops with hands-on experiences, modeling workshops that focus on model-making techniques and abilities and crafts, extensive field trips to actual construction sites, workshops in concept development and creative thinking, and art workshops that include painting, music…etc.

These kinds of proposed activities do open up a discussion on the learning culture of the program and its support or need of non-architectural or architecturally-supporting subjects and materials that may provide additional skills, self-development attributes, or life-long learning (Guest & Schneider, 2003; Feldman & Matjasko, 2005; Dalrymple & Evangelou, 2006; Polatoğlu & Vural, 2012).

For example, the consideration of extracurricular activities related to mental health awareness can be supportive of a learning culture that reflects self-development and attributes that may even support aesthetical design values such as confidence and self-expression.

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[36] The extracurricular activities proposed were not assembled for each grouping variables, i.e., for each studio level. The reason refers back to the assumption that, in most cases, these extracurricular activities are mostly accessible to all students with no restriction to studio levels.

Table 5.2: (by author) Extracurricular Activities to be Added and their Assumed Contribution to the Culture of the Architectural Program

| Extracurricular activity | Results | Contribution to the learning program |
|---|---|---|
| Architectural tutoring and teaching | -55% to be added. | -Supportive of the concept of peer-learning. |
| | -45% not to be added | -Training on the role of an architect as an educator. |
| Mental health awareness | -54% to be added | -Self-development |
| | -46% not to be added | -Wellbeing and health |
| Technological representation tools | -74% to be added | -non-formal learning |
| | -26% not to be added | -Supportive non-architectural skills |

Architectural tutoring as extracurricular activities and its relation to peer learning can be seen, as an example, in the Peer Assisted Learning Program in DoA, Waterford Institute of Technology in Ireland. Máire Henry, in meeting with heads of several European schools of architecture in 2012, mentioned the benefits of such program to the studio/learning culture of the schools.

On one, students attending such activities may develop skills in mentoring and professional teaching skills that would develop their skills to be future educators. On the other, students who didn't attend the program, usually junior students in their first or second year, can learn from senior students, as teaching assistants, in a more interactive learning culture.

The parameter concerned with the more informal interactions of the studio showed some interesting and statistically significant variations between the responses provided. Two variables can be put to the foreground when it comes to developing an understanding of design studio culture. First, the results show a significant variation

between responses provided for variable IN1 that reflects student-student interactions within the studio's learning experience.



Figure 5.5: (by author) Abstract Manifestation of the Variation of the Importance of Students-Students' Interactions within 2nd and 4th-Year Studios

The responses of second-year students and fourth-year students can be viewed within a descending variation in their average responses. On one hand, students in second-year studios almost strongly agree on the importance of their interaction with other students within the interactions of the studio. On the other hand, the average response of fourth-year students decreases in agreement when it comes to these students' interactions with other students (Figure 5.5).

Taking the agreement on verbal communication and the agreement of student-students' interactions, the studio culture of second-year studios is staged within the social framework that was elaborated by Kvan (2001b) that reflects two aspects: tactic compacts and peer learning. In this case, the tactic compacts can easily be noted within this verbal, and often non-verbal, expressions such as motivation, enthusiasm,

expectations of the other or peer competitiveness and how it is transferred through these students-students' interactions.
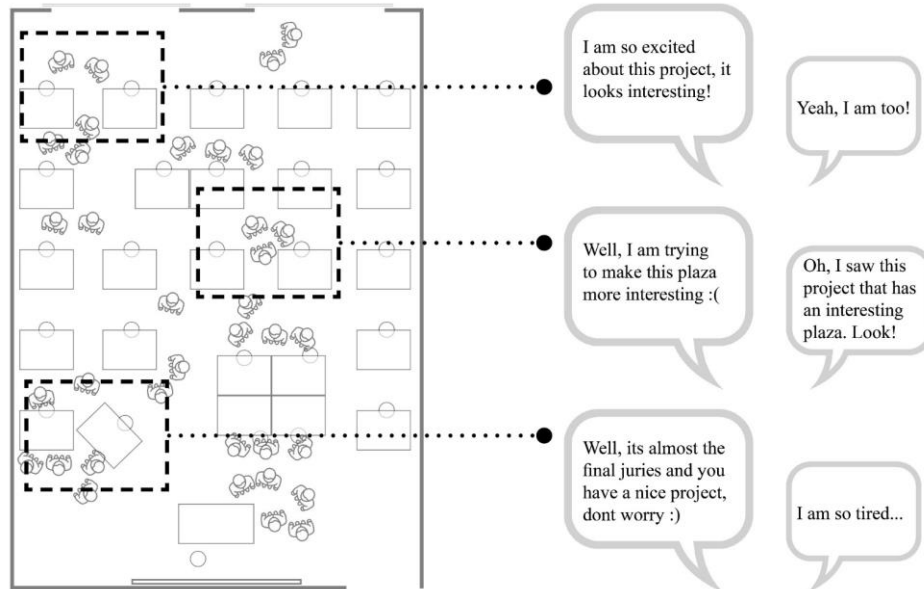


Figure 5.6: (by author) Adopting a Social Framework in Studio Culture of Second-Year Studios (Students' Interactions and Verbal Communication with its Underlying Tactic Compacts)

Second, another statistically significant variation may be noticed within variable IN5 that questions teaching assistants' interaction with students and its importance in the project-based assignments and its development in the studio. Here, the variation can also be noticed within a descendant correlation. While second-year students show an almost strong agreement on the importance of their interaction with teaching assistants in the development of their projects' assignments, students' average response in fourth-year studios decreased with a notable difference (from 4.38 to 3.68 on the assumed Likert scale of agreement). This denotes that the presence of teaching assistants seems more important within the learning culture of second-year architectural studios and such importance decreases as the studios' progress within the program.

This slight descend in the agreement was also noted within variable IN4 that was concerned with the nature of interaction with teaching assistants. While second-year students almost agreed that their interaction with teaching assistants is less stressful within the learning experience, fourth-year students reflected an average response between naturality and agreement.

To build up the discussion on these findings, the advantages of peer-learning elaborated by Kvan (2001b) might be worth mentioning. First, learning in the studio format usually manifests itself through a "many-to-many" learning culture (many individuals learning from many other individuals) in comparison to other learning formats that usually adopt a one-to-many approach. Since these early studios are mostly embedded with uncertainty in facing ill-structured or ill-defined design problems (Lawson, 2006), students may refer to their peers (other students or teaching assistants) for discussions alongside the instructors' guidance.

Second, Kvan assumed that discussing ideas and issues with their peers, students seem less formal and more at ease since these discussions are not evaluated.

Up until here, three variables might be staged in the following scenario. Figure 5.7 demonstrates the relationship between students-students' interactions, student-teaching assistants' interactions, and the extracurricular activities proposed in architectural tutoring and teaching.
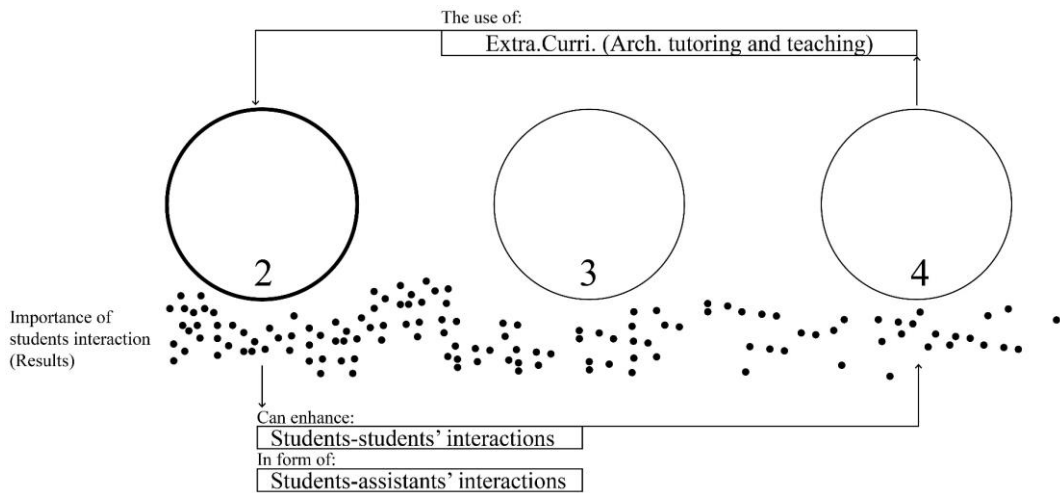
Figure 5.7: (by author) Studio Culture of Second-Year Studios Through Interactions and Use of Extracurricular Activities

It is worth mentioning that the variables concerned with instructor-student interactions (IN2) and the role-model figure of the instructor within these interactions (IN3) were somehow persistent, with a slight variation[37], in the average responses across the studio levels. For example, although second-year students almost agree (3.96) in the role-model figure of the instructor within the desk reviews, fourth-year students are slightly less agreeable (3.62) in this aspect of their interaction with their instructors (Figure 5.8).
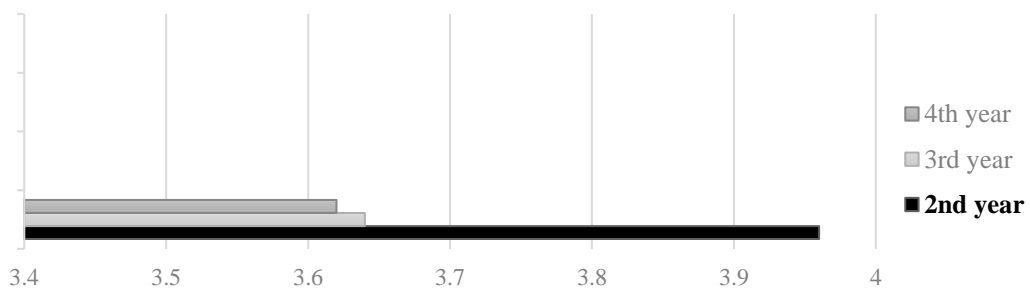


Figure 5.8: Variation Between 2nd and 4th-Year Students' Responses on the Instructor as a Role Model within the Desk Reviews of the Studio

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[37] Note that the variation was not noted within the Kruskal-Wallis H and Mann-Whitney U tests used to test statistically significant data.

This higher agreement in the second year in the role-model figure of the instructor can easily be noticed when Goldschmidt, et.al (2010) elaborated on students in early years as quite dependent on their instructors for approval and guidance when developing their projects.

Indeed, Lawson (2006) further assumed that satisfying the instructor's expectations is the easiest way to handle the situation of uncertainty within these early stages of the design studio. Thus, this dependency in situations of uncertainty may be the reason why students develop this role-modeling figuration of the instructor, especially in the early studios such as second-year studios.

On the other hand, going into upper levels to third or fourth years in the architectural curriculum, students start to develop a non-dependence on their instructors. In this case, although students still look up to their instructors as role models in achieving their competency, students rely more on the view of their instructors in the figuration of a coach than a role model (Schön, 1985).
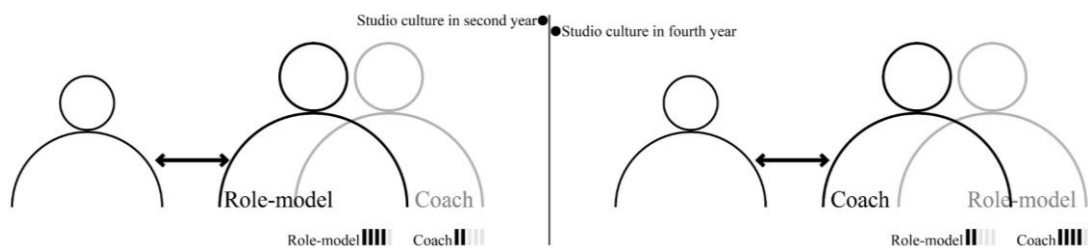


Figure 5.9: (by author) Comparison Between Studio Culture of Second and Fourth-Year in the Students-Instructors' Interactions

To understand the physical space of the studio and its contribution to the studio culture, the variable PS1 questioned the desk arrangements and layouts in the studio from the perspective of students.

Figure 5.10: (by author) Different Interpretations from the Results on the Default Layout of the Studio

Here, this aspect in question reveals how the layout of the studios' furniture may encourage or discourage certain activities or practices and would provide a considered understanding of the relation of the interior elements of the studio and its practical use (Strange & Banning, 2000; Bartlett, 2003). Taking the default layout of the studios as a base of reference, figure 10[38] demonstrates how the results reflected on such layout. Here an argument can be built upon these suggestions provided by students' participants. For instance, the students who referred that the desk arrangements should be grouped or more assembled arrangements are mostly responses provided by students in their second-year studios. This indicates that within the second-year

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[38] Review this figure with the results in table 4.13 in Chapter 4 that demonstrates the phrases of the participants responses on variable PS1

studios, not only do students agree that students-students' interactions are important in their learning experience (as argued previously), the physical space of the studio must, in a sense, support these interactions through its furniture arrangements. Here, (See figure 5.11) the practices and the spaces of the studio may be assumed in dependent correlation (Taylor, 2009).
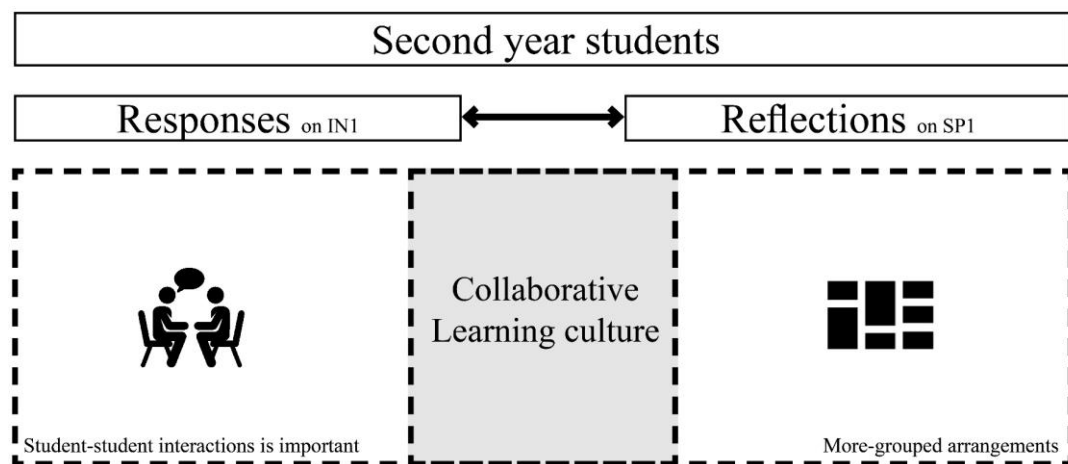


Figure 5.11: (by author) Combined Results Showing the Relationship Between Students-Student's Interactions and the Furniture Arrangement of the Studio in Second-Year Studios

Also, within the questionnaire, students were asked to further reflect on the physical space of the studio within variable PS2. The collected responses opened the discussion for a few major themes that might be considered when discussing the studio's physical space. Figure 5.12 demonstrates the main underlying patterns or concepts that seemed either persistent or repetitive when indexing the data. It is worth mentioning that these themes are, in their abstract sense, an indication of the use of these spaces and reflect a student's point of view on the use of the design studio space.
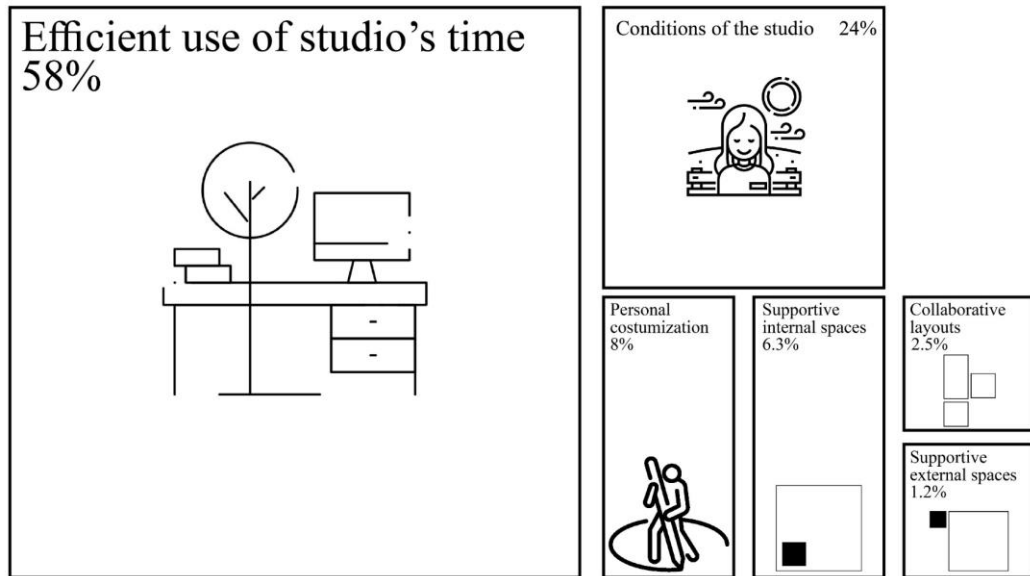
Figure 5.12: (by author) Thematic Framework Underlying Themes or Concepts

First, students collectively reflected on the elements within the space of the studio that seemed to hold back its maximum potential and use while being in the studio. These aspects may ensure some sort of efficient use of the studio's time and space when considered. For instance, 58% of the responses reflected on the notions of comfort in using the studio's furniture such as the stools or the tables.

One interesting note, a student mentioned, is that the studio's space has become "like a waiting space" where most of the work done on the project assignments is mostly achieved outside the studio's space and time. The following narrative develops a better understanding of how the studio's level of comfort, in its interior elements, can affect the studio's culture.

First, by providing more comfortable studio furniture, students are mostly inclined to use the space of the studio to work and develop their projects. In other words, the level of comfort will increase the time students spend in the studio's space. Secondly, Cheng (1998) demonstrated the relationship between time spent in the learning environment

and its role in building stronger social relations. Figure 5.13 manifests the narrative to the results obtained.
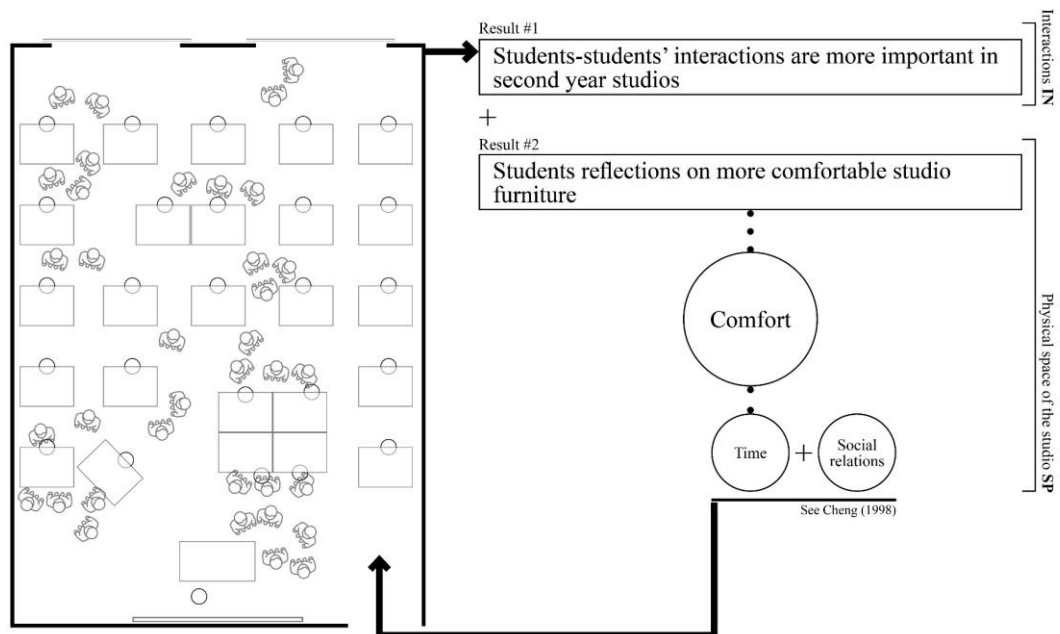


Figure 5.13: (by author) Combined Narrative for the Interactions and the Physical Space in the Studio Culture of Second-Year Studios

The lost studio time or "studio as waiting space" was also discussed as a concern within the 2016 report for NAAB Visit for Substantial Equivalency for the architectural program of DoA of EMU. What was termed as the "hot desk"[39] issue can, to an extent, affect the studio's interactive learning culture and its prolonged processes and practices.

Second, 24% of the responses provided had indications of the conditions of the studio within their reflections. These conditions even extended to the importance of the

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[39] The "hot desk" situation, in architectural education, refers to the flexibility of students to use the same physical features such as the studio desks, chairs, pin up boards…etc. (Ditchburn, 2014).

interior atmosphere of the studio's spaces that included lighting both in its natural and artificial forms, paint colors used in the space…etc.

A third theme that emerged within the responses may indicate the links between the studio's space and the students' aspirations and the way they develop an understanding of their learning space within the studio. Within the responses, 8% of students elaborated on the ability to customize their working space with process-supportive tools such as mood boards. Others also provided some indications on how the studio's furniture can be adjusted and provide flexibility to be modeled with different body postures or working habits.

Another interesting reflection within the students' responses was related to the proposed spaces that can either be considered within the walls of the studio or even outside within the department as a whole. Although it made up 3.7% of students' responses, these aspects were deemed necessary due to its contemplation of the spaces that might support the studio's physical space. Figure 5.14 demonstrates some of the respondents' reflections within and outside the studio space.



| Small Library | Common public "studio space" |
| Model-making corner | Model-making labs |
| Visual inspirations | Materials workshops |
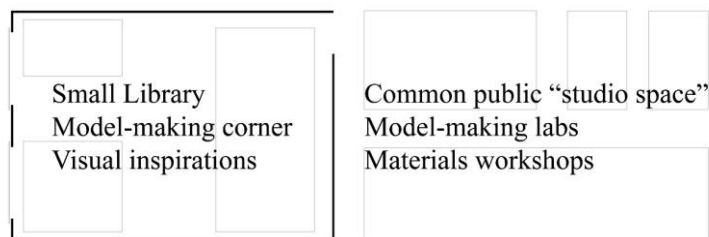
Figure 5.14: (by author) External and Internal Supportive Spaces to the Studio's Space

The themes of the studio's atmosphere, the personal customization of the studio and the additionally added spaces to support the studio can be more elaborated when

situating the architectural studios in EMU within the predominant layouts of studios in architectural education. Assumingly, the layout of the architectural studios in EMU falls in an in-between case of an open and closed layout.
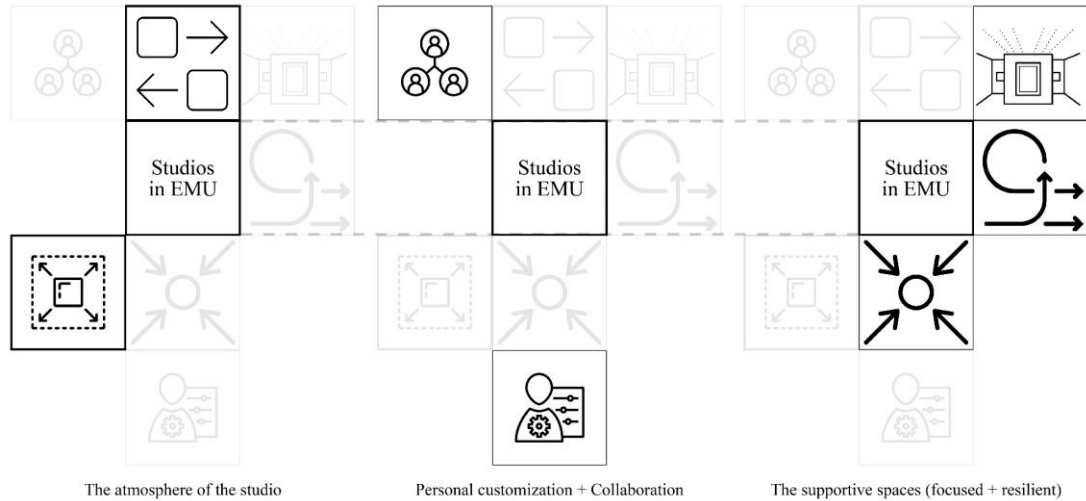


Figure 5.15: (by author) Physical Space and Studio Culture in EMU Between the Open and Closed Layouts within the Emerged Themes.

Depending on the strengths of open and closed studio layouts analyzed in chapter 3, the themes reflected by participants can raise a potential opportunity to use this in-between situation to support its studio culture. To elaborate more, figure 5.15 presents the situation of the architectural studios of EMU in terms of its layout and how to address the themes that emerged from the results.

For this research, the inquiries related to the understanding of design values in the architectural design studios in EMU revolved around three main approaches.[40] Based on the elaborations provided by Holm (2006), the questionnaire was considered around:

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[40] The categorization of these design values is described in more elaboration in Chapter 3

- Social design values that deal with how societal reflections, challenges, and limitations are being elaborated within the studio's learning culture. For these, social local design values are concerned with the local set of social opportunities, limitations, and considerations reflective of the community of Cyprus (the region of the DoA of EMU) in the variable (VA1). In addition, due to the diverse population of students that reflect different international backgrounds, international design values were considered in a variable (VA2).

- In addressing environmental issues and consideration, environmental design values were considered within variable (VA3)

- Aesthetical design values which included Creative problem-solving and critical thinking and confidence in visual and aesthetical communication and self-expression as variables (VA4/VA5)

According to the results obtained through the statistical tests (descriptive statistics, Mann-Whitney U, and Kruskal-Wallis H tests), a statistical significance can be noted within the responses on variable VA2. To elaborate, students in their 2$^{nd}$ and 3$^{rd}$-year studios somewhat agree ($\bar{x}$ = 3.58/3.60) that international issues and concerns were part of the proposed project assignments.

On the contrary, 4$^{th}$-year students decreased in their agreement and remained neutral in their responses to the assessment of addressing these design values. ($\bar{x}$ = 3.06) Figure 5.16 demonstrates this concentration of design values and its transition within the studio's culture.
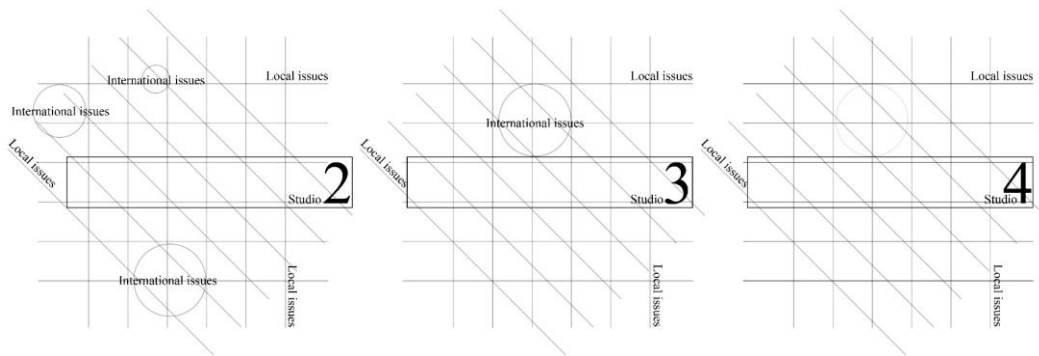
Figure 5.16: (by author) Transition of International Social Values to more Focused Local Social Values

The concentration of addressing international social values within the second and third year might be supportive of a more explorative studio culture that extends local conditions while in fourth-year studios, in a sense, these values are replaced with the preparation of practicing professionals that are involved much more with their local community in which they are graduating into. Yet, the agreement on social design values, in both its local and international forms, clearly indicates a socially responsible studio culture. Depending on how social change was addressed in the early programs of Bauhaus (See Hughes & Walsh, 1991) and how it is addressed today, which was analyzed in Chapter 3, a socially responsible studio culture in EMU defines a social change in a parallel situation with design and technology.

Table 5.3: Segment of Table 4.5 (from Chapter 4) Demonstrates a Significant Variation in VA4

| Questions (VA) | Studio level | n | $\bar{x} \pm \sigma$ |
|---|---|---|---|
| Aesthetical design values (Creative problem-solving) | 2nd year | 24 | **4.21 ± .721** |
| | 3rd year | 42 | 3.83 ± 1.102 |
| (VA4) | 4th year | 34 | **3.56 ± 1.050** |
| | Total | 100 | 3.83 ± 1.025 |

n: number of respondents          $\bar{x}$: mean scores          σ: std. deviation

Looking at the mean scores of the response, another significant variation, that was not detected through the tests, can be noted in the responses accumulated to variable VA4 on the aesthetical design values and the creative problem-solving (See table 5.3).

For instance, in the second year, students, to an extent, strongly agree ($\bar{x} = 4.21$) that the approaches to the proposed design problems allow them to develop their creative skills and abilities to analyze problems and situations and provide design solutions. On the other side, in the fourth year, students' average responses range between agreeing and being neutral. ($\bar{x} = 3.56$). This agreement on creative critical thinking can be, prospectively, associated with the results on variable (LC3) that is concerned with the critical thinking abilities that students develop within the learning program.

Since both variables are strongly agreed upon by second-year students, studio culture at this level can be understood as a culture that is based on creative and experimental critical thinking abilities. As the studios progress in their level and complexity, this experimentally-based learning culture tends to translate into more mature and integrative critical thinking. This might indicate a certain studio culture that was mentioned within the ongoing project NEST. Defined as a studio culture of mastery and love, these cultures rely on the idea of self-expression and being passionate about that expressed (De Walsche, 2016b).

Also, for the aesthetical design values, confidence in self-expressing ideas (VA5) was almost agreed upon across all year levels (total for 100 responses was 3.95) indicating a studio culture that allows students to build up confidence in developing their expressive values. Here, closed layouts of studios in the DoA of EMU can use its

layouts to encourage a studio culture that values self-expression and confidence. In this case, several possibilities might support such claims. These are:

- The architectural program in DoA of EMU, as noted in its curriculum plan presented in Chapter 4, progresses from less to more complex proposed assignments and design tasks. With less complex design problems, students in the early years have more opportunities for creative problem-solving and self-expression (Figure 5.17).

- Going back in history to the basic courses of the Bauhaus or the aesthetical applications of the Beaux-Arts, and up until today, the focus on creative impulses and self-expressing intuitions predominant most of the early studios in a large number of architectural programs (Cross, 1990; Cross, 1980; Fisher, 2000; Anthony, 2012).
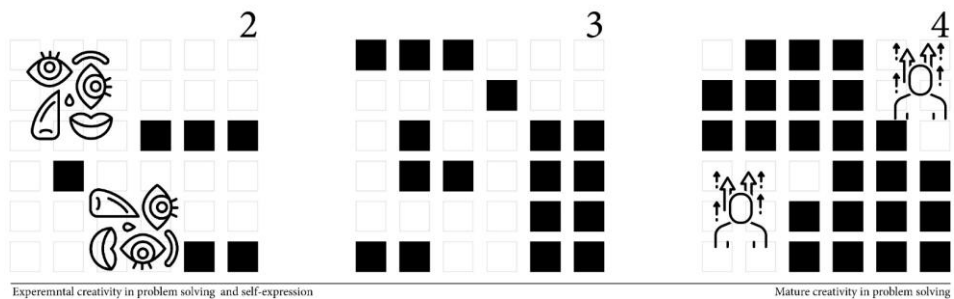
Figure 5.17: (by author) Transition from Studio Culture from Experimental to more Mature Aesthetical Design Values

Moreover, the responses on the environmental design values (VA3) showed a non-noticeable variation between the year levels with almost all responses, in a way, agreeing that the studio's process and assignments allowed them to develop an environmental lens and environmentally-valued approach within the proposed design tasks.

Here, the situation of these values (social, environmental, and aesthetical) within the definition of studio culture in EMU can be further enhanced with the opportunities provided in considering:

- the studios' relation with extracurricular activities (LC4). The learning program can use this agreeable variable to address and enhance these design values.

- The additional supportive spaces in and outside the studio (proposed in variable PS2) can also correlate with social, environmental, or aesthetical considerations.

Overall, while discussing the results, many narratives have emerged that would provide the understanding of studio culture in the architectural design studios as aimed. First, under the learning culture and pedagogical perspectives, the following narratives might be summarized based on the results and discussions provided.

**Narrative 1**: The agreement on the aspect of time management (LC1) across all year levels allowed the possibility of assuming that studio culture in the architectural design studios in EMU are considerate to time and time management. Students' agreement may have indicated a certain level of respect to time that might be an asset when describing studio culture.

**Narrative 2**: While aspects such as verbal communication approaches (LC2), and their relation to students-students' interactions (IN1), might be considered agreed upon in all year levels; a slightly higher agreement was noticed in the second-year studios. This might direct, to an extent, more focus towards using these aspects in understanding or even defining the studio culture of second-year studios.

**Narrative 3**: When taking critical thinking (LC3) into the picture, the agreement of students in second-year studios can be correlated with the agreement on creative problem-solving (VA4). Another stroke draws the studio culture of second-year studios even further as a learning culture that might be considered for its focus on critical thinking and the possibility to enrich aesthetical design values such as creative problem-solving in reflecting innovation within the studio culture.

**Narrative 4**: The relation of the studio, within the program, with the extracurricular activities proposed, might be agreed upon in all year levels with a moderate decrease from the viewpoint of fourth-year students. This might indicate that extracurricular activities might be predominantly effective in early years such as second or third years.

This effectiveness can also be considered in the type of activities proposed and its related disciplines. The results showed that students collectively assumed that extracurricular activities such as mental health awareness, architectural tutoring, and teaching and technological representation tools should be considered or added to the program. These activities might provide a nurturing opportunity for the learning culture of the program to support mental wellbeing, training for future architectural educators, and technologically-advanced learning culture.

The following figure shows the narratives that relate to the pedagogical perspectives of the studio and the program and how based on the results may be narrated (indicated as narratives) or considered (indicated as considerations) with the other results on the other parameters.

Figure 5.18: (by author) Understanding Studio Culture Through Proposed Pedagogical Perspectives and the Learning Program

Second, under the parameter concerned with the informal interactions of the studio, the results showed statistically significant variations within the students-students' interactions (IN1) and students-teaching assistants' interactions (IN5).

**Narrative 5**: Using the Kruskal-Wallis H and Mann-Whitney U tests, second-year students seem more validated in the importance of students-students' interactions (IN1) within their studio culture as opposed to fourth-year students. This validation was even reflected in the physical space of the studio and the responses provided for the arrangement of studio desks (PS1), as most second-year students preferred grouped desk layouts and group working areas.

**Narrative 6**: The students-instructors' interactions (IN2/IN3) may have reflected the figuration of the instructors within the studio's culture. This narrative contributes the figures proposed within the literature (See Schön, 1985; Quayle, 1985; McLaren, 1999; Uluoğlu, 2000; Goldschmidt, 2002; Webster, 2004 and Goldschmidt, et.al, 2010) and elaborates the role of the instructor as a role model in the studio culture of second-year studios and the shift to a "coach" in the fourth-year studio's culture.

**Narrative 7**: The teaching assistants-students' interactions (IN5) were also agreed upon within the second-year studios in comparison with fourth-year studios. (Supported by the statistical significance tests) Such finding might, in a way, correlate as one form of students-students' interactions (since teaching assistants are often senior students) and support many claims within the literature, especially those of Lawson (2006), where students' uncertainty might require them to look for extra sources of discussions and interactions in addition to those with their instructors.

**Narrative 8**: The results on the informal interactions of the studio, in comparison to the other parameters, received a higher rate of agreement. This may indicate that studio culture in EMU might be in support of more sharing and engaged studio culture.

The following figure shows the narratives that relate to the informal interactions of the studio and how based on the results may be narrated (indicated as narratives) or considered (indicated as considerations) with the other results on the other parameters.
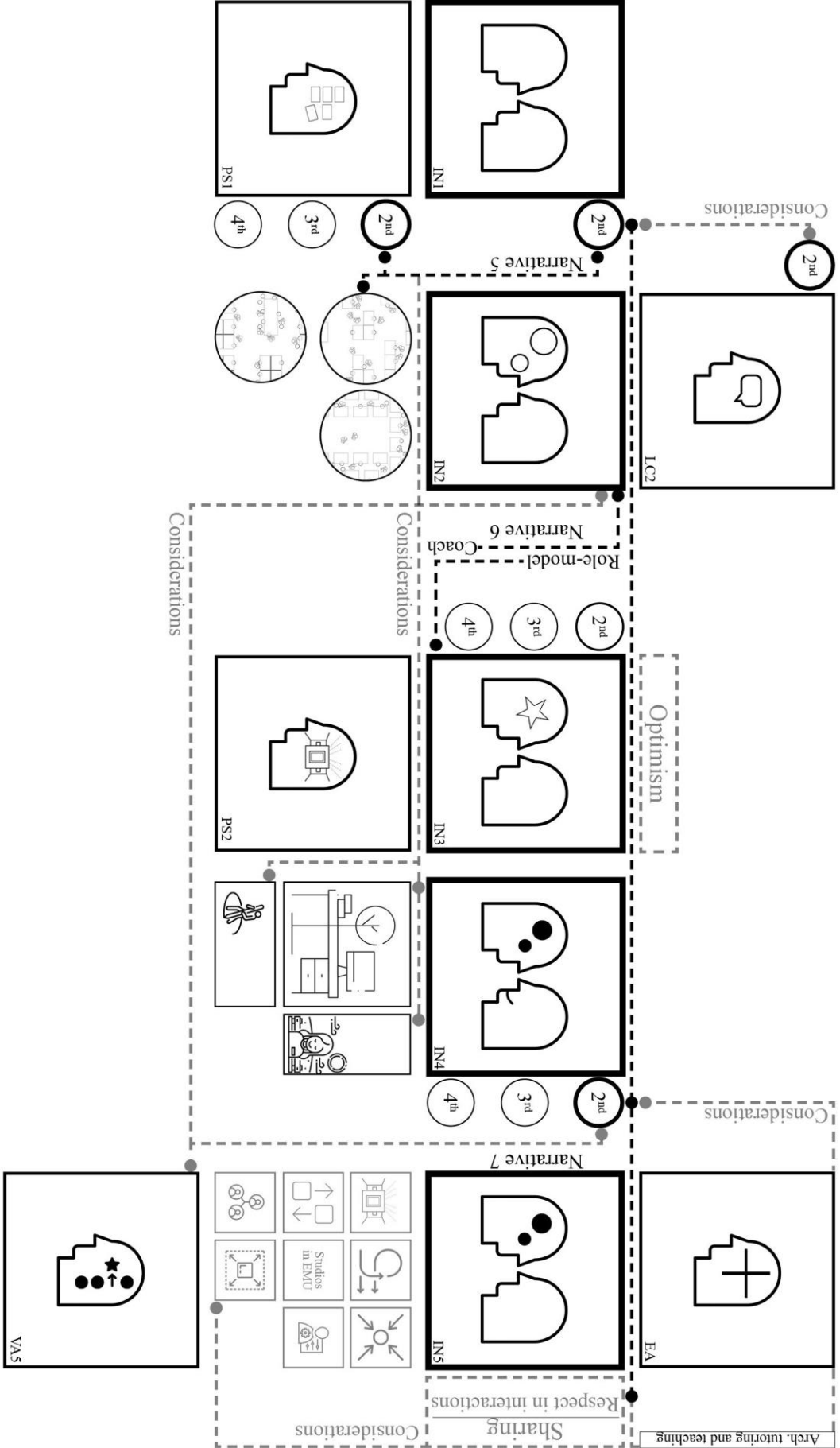
Figure 5.19: (by author) Understanding Studio Culture Through Proposed Informal Interactions of the Studio

Third, the thematic analysis of the responses provided for the physical spaces of the studio has established some major narratives related to the other parameters proposed and the overall understanding of studio culture.

**Narrative 9**: The responses provided for the considerations to be added or enhanced within the studio's physical space (PS2) have situated the physical space of the architectural studios of EMU within the qualities of what seems to be a semi-open or open-closed layout. Positively, such a situation might be the best of both worlds when it comes to combining the benefits of both the open-plan layout and the closed layout. For one, the closed layouts of studios in the DoA of EMU can use its layouts to encourage a studio culture that values self-expression and confidence. On the other, its open layouts may provide the space needed to support the interactions and its assumed level of sharing and engagement. Thus, the studio culture in EMU can be assumed as the balanced culture of the two.

**Narrative 10**: The themes that emerged through the thematic analysis may have provided some potential for the studio's physical space to support the addressing of values and issues related directly or indirectly to the studio's pedagogical works. Here, through the theme of supportive spaces inside and outside the studio's space, spaces can be created to encourage any of the proposed values.

The following figure shows the narratives that relate to the physical attributes of the studio space and how based on the results may be narrated (indicated as narratives) or considered (indicated as considerations) with the other results on the other parameters.
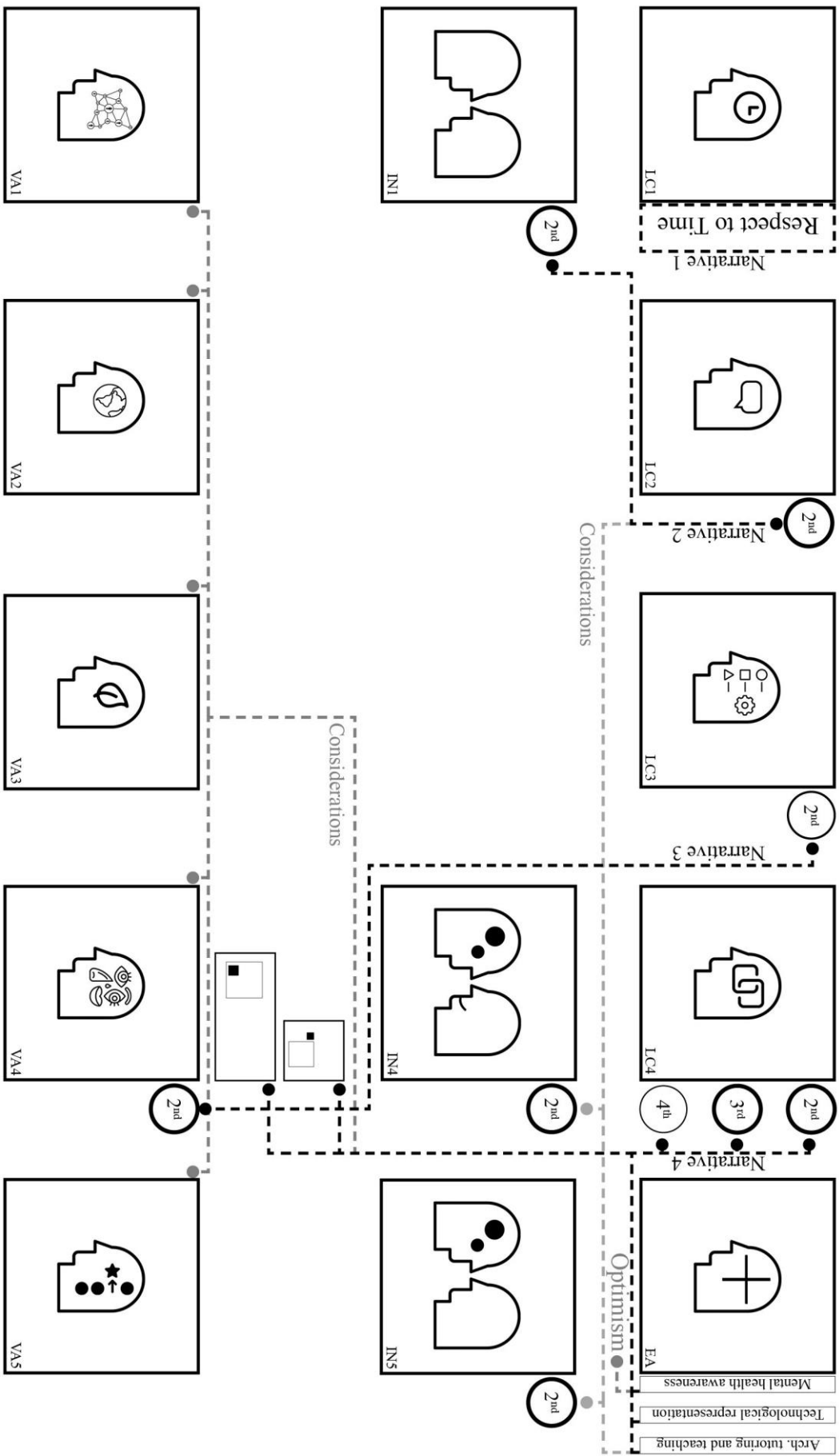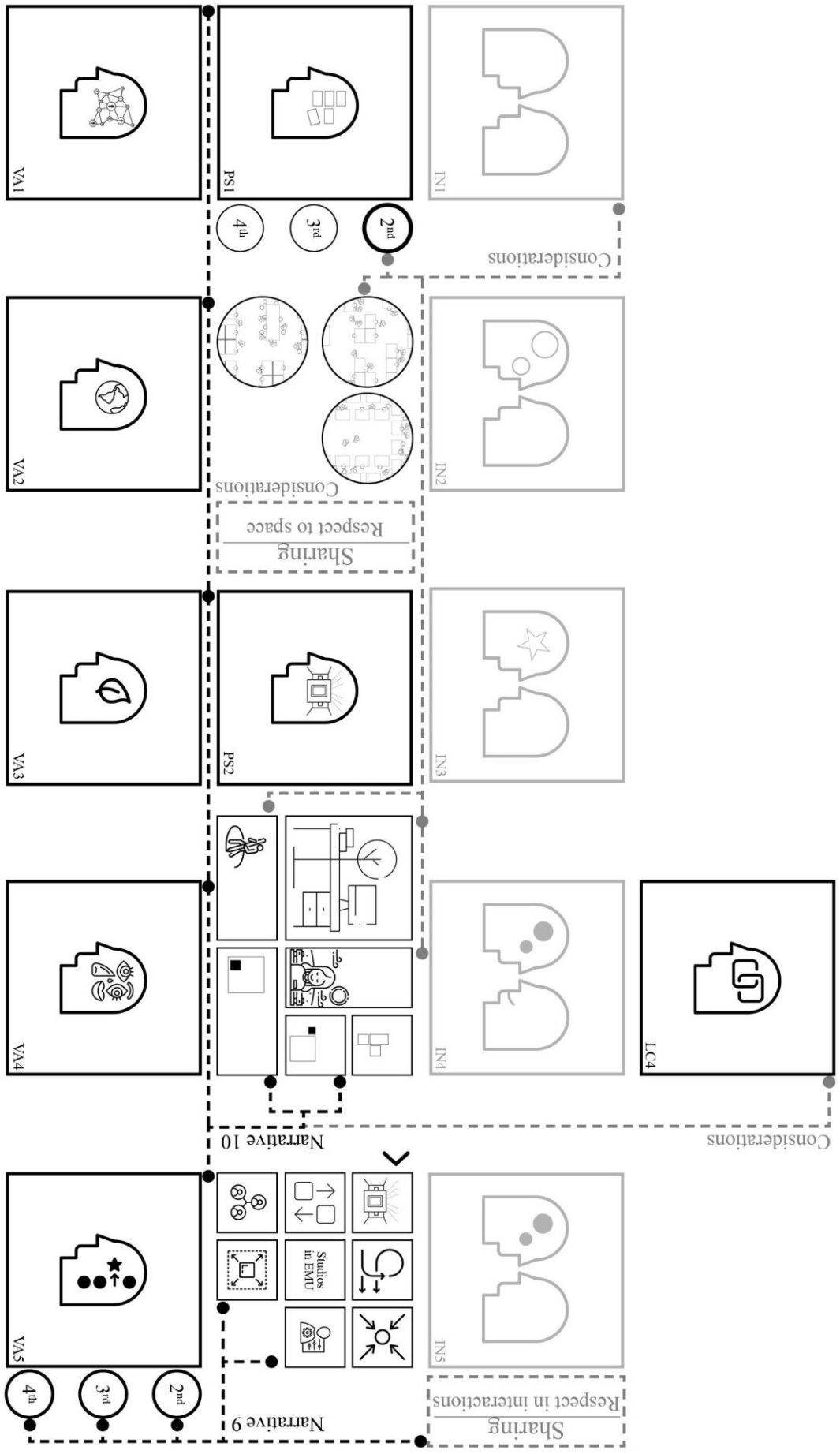
Figure 5.20: (by author) Understanding Studio Culture Through Proposed Physical Space of the Studio

Last but not least, the findings related to the values within the studio and its relation to the understanding of studio culture can be indicated through these predominant summarized narratives or considerations (See figure 5.21).

**Narrative 11**: Within the variables concerned with the social design values, a statistically significant variation supported the possibility that students in the third year have validated international social design values within their studio's practices as opposed to fourth-year students who seemed more validated towards the local social values that are related to the local conditions of the region of Cyprus. These findings contribute to the engagement of the studio's culture and its relation to external social climates.

**Narrative 12**: When defining studio culture in terms of its creative problem-solving aspects (VA4), the progression of the studio level can be a major factor. Here, based on the results, students, in their second year, seemed to value creative problem-solving when compared to students in their fourth year. Nevertheless, such findings do not assume uncreative studio cultures within fourth-year studios but rather a maturity in creativity which seems different than the experimentalist approaches of early studios such as that in the second year.

This differentiation can also be supported by the results provided by previous variables such as the interactions between students and teaching assistants (IN4) and the studio's relation with the extracurricular activities (LC4). Here, the experimental nature of creativity in problem-solving can be supported by creative extracurricular activities in favor of second-year studio.
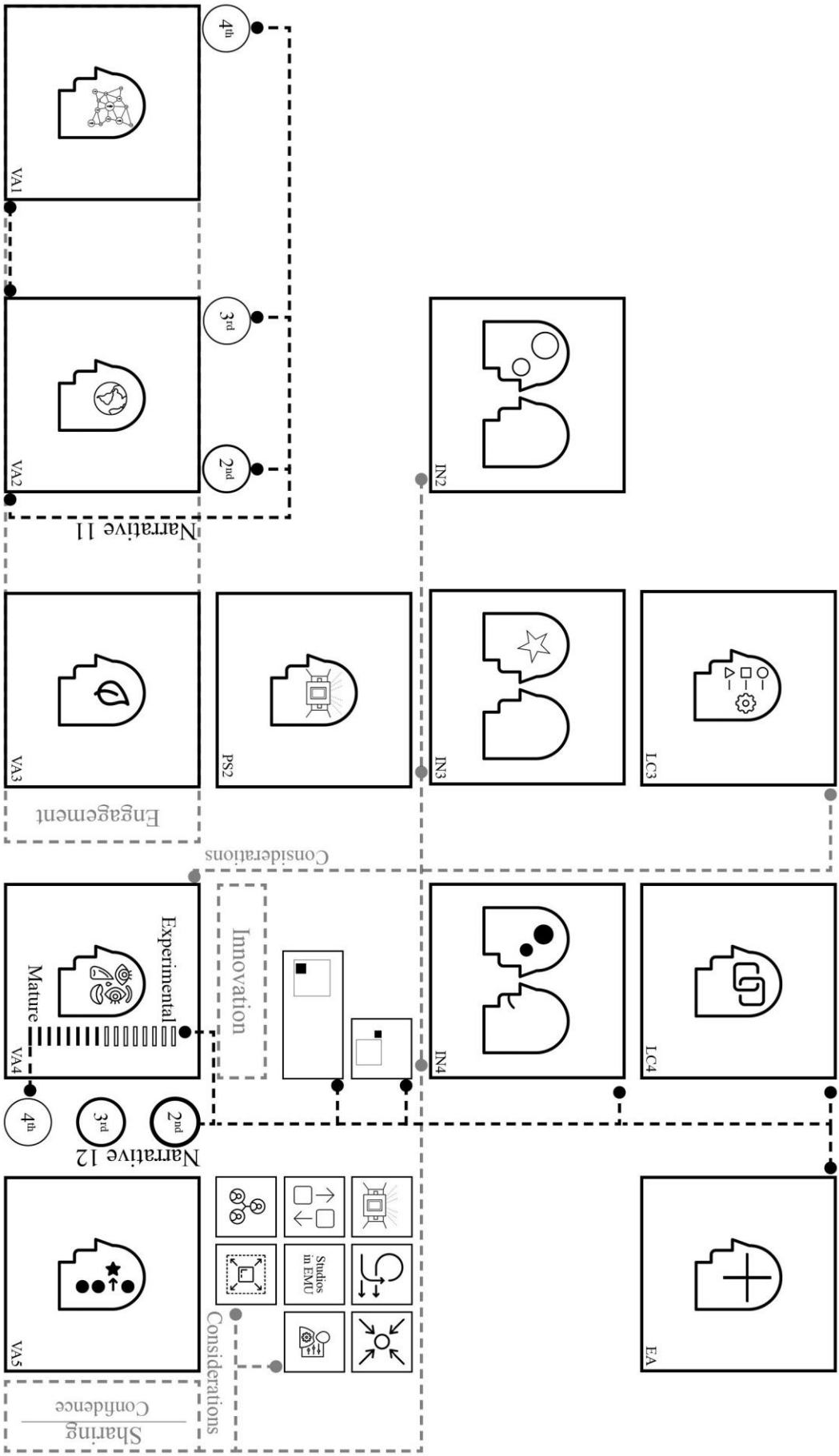
Figure 5.21: (by author) Understanding Studio Culture Through Proposed Design Values within the Studio

## 5.2 Implementing a studio culture policy

Taken from the students' perspective and their reflection on studio culture, the understanding of studio culture, and the investigated parameters in the proposed narratives may have provided a rather conceptual understanding of the studio culture of the architectural design studios in EMU. Although on a theoretical basis, this conceptual understanding of studio culture might be beneficial to unravel, to an extent, a modest portion of this valuable aspect of architectural education, translating it into a practical studio culture policy document might still be in question within this research (See the research questions in Chapter 1).

Even though the first task force published by the AIAS in 2002, *The Redesign of Studio Culture*, had a tremendous impact when it comes to the introduction and the implementation of studio policies, the AIAS wished to launch a review of this introduction and place in the archive the successes, misleads and future opportunities of the implementation of the studio policy within the NAAB accredited schools of architecture.[41]

For this purpose, the second task force was conducted in 2008. To achieve its aims, the task force was comprised of three phases:

- Data collection phase that included previous studio policies and a first survey in the studio culture initiative.

- Policy review which included four groups representing several associations such as AIA, AIAS, ACSA, or NCARB.

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[41] NAAB required accredited universities to provide a "studio culture policy" within its conditions concerning studio/learning culture. This requirement was even recommended in the AIAS task force report (See Force, Koch, et.al, 2002).

- Analysis phase that included additional figures within the represented associations to provide the lessons and future opportunities of the studio policy implementation.

To even provide further clarification on this discussion of implanting or writing a studio culture policy, an article published in 2019 by two members of the AIAS Board of Directors; Melissa Russell and Scott Cornelius, shared a reflective review of the process of rewriting a studio culture policy in one of the accredited schools, the School of Architecture in Oklahoma State University. The article attempted to note the (un)successful and issues that arise within redefining and rewriting a studio policy.

Relying on these two sources to help in answering the second research question on the implementation of studio policy within the architectural design studios of the DoA of EMU, the following presents emerging aspects within the findings of the 2008 task force and the indication within the article published in 2019 and its reflection to the established understanding of the studio culture.

1. **The views of many personalities**

One of the discussions within the 2008 task force reflected the viewpoints to be addressed when implementing a studio culture policy. This, for an instance, reflects on the basis that the studio culture is affecting and is the responsibility of several educational, and often non-educational, figures such as students, instructors, administrators…etc.

This was even clear when the AIAS article in 2019 advised future implementations of studio policies to be integrated or overlapped by its multiple agents and their developed or reflected understanding of studio culture. While the investigation of this research

limits its boundaries within the students' perspective on studio culture, to implement a studio policy, this understanding needs to be supported by faculty's view on studio culture that includes the instructors and any administrative figures related or has an effect on studio culture.

## 2. From a studio culture narrative to a studio culture policy

The concluded review of the policies in the 2008 task force indicated that these policies as the names indicate are policies described through rules-like format and rigid regulations that may not reflect certain unique learning characteristics of the studio's culture or the program's distinct learning environment and experience.

By looking at the future recommendation provided by the task force, table 5.4 demonstrates the contrast between a studio culture policy and a studio culture narrative.

Table 5.4: (by author) Comparison Between Studio Culture Policy and Studio Culture Narrative.

| Products of understanding studio culture | Basic assumptions |
|---|---|
| **Studio culture narrative** | Based on portraying the learning experience and its uniqueness. |
|  | Conceptual development on studio culture |
| **Studio culture policy** | Based on rules and regulations in formal and direct formats |
|  | Administrative development on studio culture. |

It is clear from the comparison in the table that the extents of this research circulate around producing a studio culture narrative. The earlier established narratives in understanding studio culture may provide a strong background reflected with students' experiences and indications of what might be deemed as unique and distinguished within the learning culture and studio culture of the architectural design studios in

EMU. As a result, when implementing a studio policy, these learning experiences can be translated into a studio culture policy that is slightly less formal and rigid.

### 3. Communicating the studio culture policy

A studio culture policy, in its final result, is merely a document of organized text. In addition, as these policies are often publicly published, several people may come across these documents, this usually includes students, instructors, external jury members, or, in some cases, just someone curious and interested to know more about that school's studio culture and its learning experience.

As a result, the way to communicate these studio policies is often as essential as its content. Here, within the 2008 task and force and the AIAS article in 2019, several recommendations were referencing the use of several communication tools and formats such as graphic catchy illustrations or animations that, in a sense, may even reflect the architecture discipline's visual communicative nature.
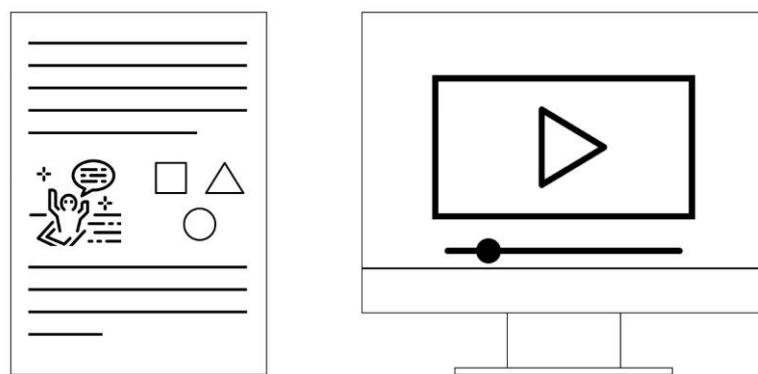


Figure 5.22: (by author) Examples of Visual Communication Tools in the Implementation of Studio Policy

Another note to mention regarding the communication of studio policy is to make sure that the studio policy is communicated or has been noticed by all those involved. As indicated within the AIAS article, some students, in most schools of architecture, are

mostly unaware that their schools even have a studio culture policy. This was even evident in the data collection phase in this research. As the designed questionnaire was distributed to the students, most students were unaware of the concept of studio culture.

Thus, when implementing a studio policy, the organization or the individuals responsible for the implementation should attempt to make sure that the studio policy is a collective work that will be communicated to all those involved, affected, or directed by these policies such as students, instructors or even visiting jury members.

## 4. From a studio culture to a learning culture

The reviewing of many studio policies within the 2008 task force indicated that the majority of these policies are studio-centered and may not extend outside the studio to include the program's learning experiences or environment.

In this regard, in their 2020, in their in-depth review of the program and student criteria, NAAB explained the replacement, in their conditions of accreditation, of "studio culture" with "teaching/learning culture". The reason for such change was that the concept of learning culture provided a more holistic emphasis on the culture that exceeds the limits of the studio's culture. The concept refers to the learning culture of the entire curriculum.

Reflected on this research, the designed questionnaire took the learning culture in mind and expanded the discussion on several pedagogical aspects within the architectural program of the DoA of EMU (See the design of the questionnaire in Chapter 4).

Expanding the discussion of studio culture into a learning culture may also include, as seen in the 2008 task force, an equal emphasis on both architectural and non-architectural subjects and learning faucets. Thus, this holistic view on studio culture was also stretched to reach the extracurricular activities that, in its bare contribution, may provide the platform for non-architectural but architecturally-supportive subject areas to be addressed.

Table 5.5: Part of the Results Relating the Studio's Relation with the Extracurricular Activities

| Questions (LC) | Studio level | n | $\bar{x} \pm \sigma$ |
|---|---|---|---|
| Relation of the studio with extracurricular activities (LC4) | 2nd year | 24 | **3.75** ± .847 |
| | 3rd year | 42 | **3.55** ± .993 |
| | 4th year | 34 | **3.44** ± 1.133 |
| | Total | 100 | **3.56 ± 1.008** |

n: number of respondents          $\bar{x}$: mean scores          σ: std. deviation

As seen in the results the relation of the studio with the proposed extracurricular activities, to a degree, seems less and in decrease as the studio level progresses. This opens a good input for the studio culture of the architectural design studios of EMU to be further enriched with extracurricular activities, especially those in their fourth-year studios.

While the suggestions in the variable (EX), in the results, show which extracurricular activities might be added or considered, these are merely the tip of the iceberg. Additional extracurricular activities from more elaborate subject areas might still be a future possibility and a recommended area of future investigation in favor of the studio culture within the DoA of EMU (See Figure 5.23).
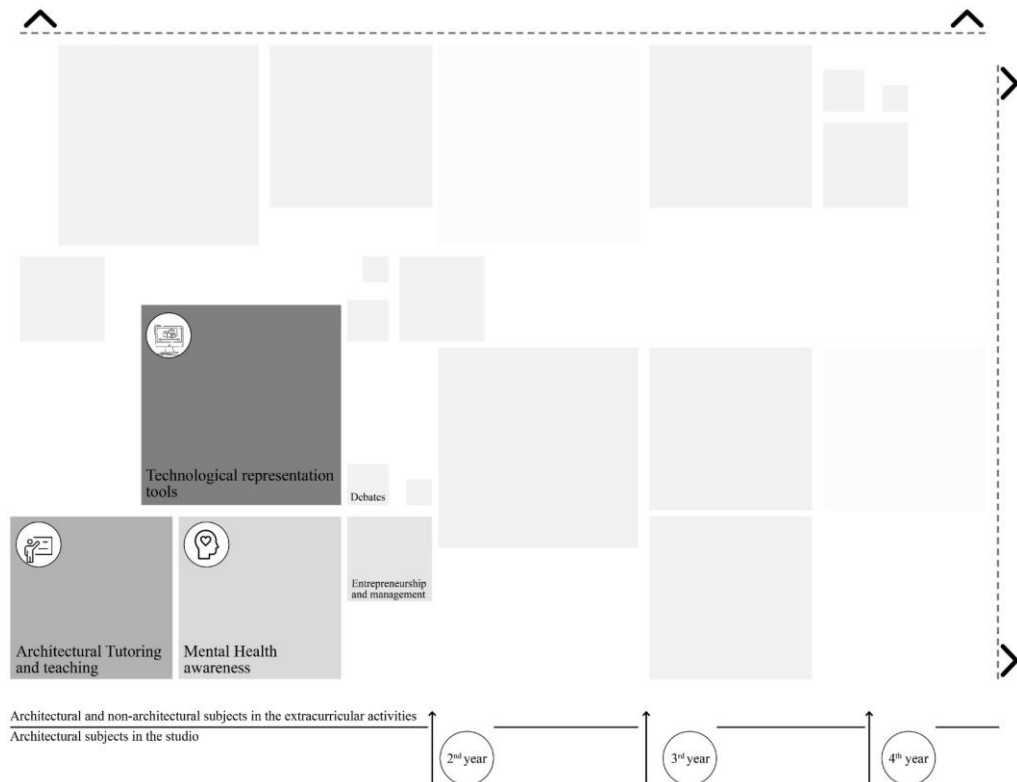
Figure 5.23: (by author) Studio Culture in Various Studio Levels and its Relation to Endless Cross-Disciplinary Subject Areas

## 5.  Towards a resilient studio policy implementation process

As noted in the previous observation, the studio culture policy is not just a written document with generic statements with singular perspectives. One of the notes indicated within the AIAS article in 2019 was directed towards the nature of the implementation process itself. One of the key characteristics of this process is its openness to discussions and reflections.

Here, the process is never one-directional nor absolute. In this case, the process of implementing a studio policy can be better described, in its best form, as a resilient process that absorbs change, adapts different points of view, and is always on the edge of changing to future demands, needs, or refinements within the studio culture.

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This is the reason why, within the surveyed studio policies in the 2008 task force, the process of its implementation was described by a long and excessive number of meetings and discussions that extend to weeks and, in most cases, even months. These meetings are even publicized for wider participation and exposure to various points of view whether from faculty members, instructors, or students.

While this research provides an attempt at a studio culture narrative from the viewpoint of students, this understanding must be revisited through meetings and discussions and integrated with other points of view (Instructors and administrative members). Yet, the established understanding might provide the switch for the process of implementation.
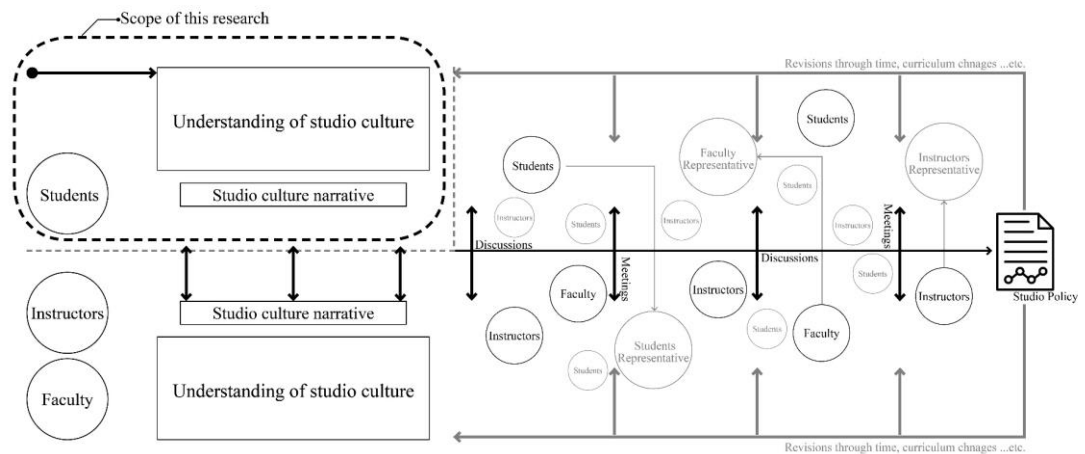


Figure 5.24: (by author) The Process of Implementing a Studio Policy in Relation to the Contribution of this Research within the Process

# Chapter 6

# CONCLUSIONS

Over the years, and since its introduction within the early 2000s, studio policies have contributed greatly to addressing studio culture within the academia of architecture. According to AIAS second task force (2008), studio policies have opened channels of communication between educational members and helped in addressing topics that were disguised as traditions, myths, and "ways of doing it around here." In addition, studio policies have also provided a referential threshold to reflect on students' attitudes towards learning design and becoming architects, instructors' teaching practices and performance, and the architectural programs' overall quality of education.

While the benefits of these studio policies are mentionable, its implementation within the architectural design studios of the DoA of EMU requires a step back and a slight base of understanding of the mere considerations and parameters that define the studio culture within these architectural studios in the first place.

Here, the relationship is mutual dependence, the implementation of studio policy requires, to an extent, an understanding of the basic parameters of the studio culture and the understanding of studio culture provides a base on which the implementation of studio policy can be built upon.

This research took this relationship into account when attempting to explore the possibility of implementing a studio policy within the architectural design studios of the DoA of EMU. To achieve this generic approach, the research aimed for two main directions.

1. An attempt to provide an understanding of design studio culture and explore the parameters and considerations that underlie this base of understanding. This understanding was based and limited in its scope through four parameters or considerations in understanding studio culture:

   - pedagogical perspectives and learning program

   - the informal interactions of the studio

   - the physical space of the studio

   - the values that are embedded in the studio.

   These parameters were noticed within the overview studio culture of many architectural schools in Europe or studio policy of NAAB accredited schools of architecture in the US. In addition, these parameters were supported separately through scholarly works or examples and collectively as a whole through models such that proposed by Shaffer (2003) and Crowther (2013).

2. Taking this understanding as a foundation that might explore the possibilities and the directions to follow when considering the implementation of a studio policy within the architectural program in EMU.

To achieve these aims, the research relied on a constructive, exploratory, and sequential approach using both qualitative and quantitative methods. On one side, the quantitative methods explored the sampled case for agreement and consent on the parameters in question. On the other side, the qualitative methods allowed several open

and subjective interpretations within the sampled size to be taken into account when building up this understanding of studio culture.

A Self-Administrated Questionnaire was distributed both in manual and online methods to a sample of students who are enrolled in the architectural program in EMU. The sample considered was limited to architectural students in their second to fourth-year studios within the program. Here, the limited sample excluded first-year students from the study as they may not have yet possessed a comprehensive understanding of the studio's learning experience and will be unable to provide reliable reflections to studio culture.

In total, 133 questionnaires were distributed of which 100 responses were returned and collected for analysis. The collected data was divided into two. First, the Likert scale questions used within the questionnaire were uploaded and organized using the SPSS 26 software. For these data, quantitative methods such as frequencies, descriptive statistics, Mann-Whitney U, and Kruskal-Wallis H tests were used to evaluate the results and find and compare, within the grouping variables, any statistically significant data among the results obtained. Second, the questions with open-ended responses were separated to be analyzed through qualitative thematic analysis methods using indexing (Löfgren, 2013).

While discussing the results, many narratives have emerged that would provide the understanding of studio culture in the architectural design studios as aimed. Looking at the narratives to explore the possibility of implementing a studio policy, two valuable documents were placed in discussions. First, after the recommendations provided in the 2002 task force report by AIAS to provide a studio policy for NAAB

accredited schools of architecture, AIAS wished to do a follow-up on these policies for possible lessons and future opportunities. The second task force in 2008 by AIAS was used, within this research to explore the possibility of implementing studio policy in the DoA and the use of the recommended lessons and opportunities for this aim.

Second, as a reaction to schools attempting to change and update their studio policies to fit current changes in their curriculum, the AIAS also published an article in 2019 reviewing the process of writing or rewriting an effective studio policy.

Reviewing these documents provided the possible answers needed to use the developed understanding of studio culture in favor of developing it into a studio policy. First, to implement a studio policy, this requires the voices and perspectives of all those involved in its understanding.

Here, the limitations of this research are expanded to future recommended works. In this case, while this research takes a students' perspective on studio culture as a limitation, this can be seen as the first step into the process of implementation. Such step needs to be supported with further work that is directed towards:

- The first-year studios that were excluded from this research. Future work can take the distinct nature of the studios' pedagogical nature and the students' novice situation as considerations to the self-administrated questionnaire used in this research in the aspiration to develop an understanding of its studio culture.

- Taking the instructors' and faculty's perspectives on studio culture within the DoA of EMU.

- The collective understandings can be used with extensive meetings, reviews, and discussions to summarize a draft of a possible studio policy.

Figure 6.1 demonstrates the limitations of this research and recommended future work that would be helpful to the implementation of studio policy in the DoA of EMU.
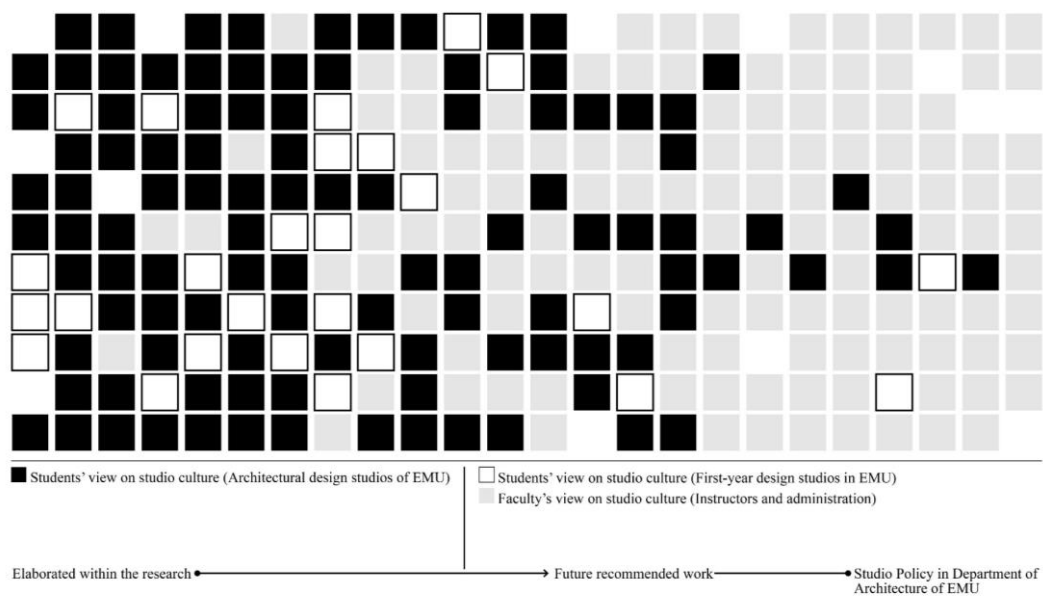


Figure 6.1: (by author) Work Elaborated and Future Recommended Work for a more Successful Implementation of Studio Policy in DoA of EMU

Looking at the figure, it should be noted that the integration of these different views into a collected studio policy is not bounded by definite ends or boundaries. Usually, when writing a studio policy, as elaborated within the cases reviewed in the 2008 task force, these perspectives are infused with reviews of different agents even if it is from the perspective of one. Here, the instructors' representation in the students' perspective is as vital as the students' perspective within the instructors' perspective for a successful studio policy implementation.

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Overall, the research contributes a modest attempt in understanding studio culture from the perspective of students as often this perspective is manifested through minimum representation or guided discussion within the process of implementing studio culture policy. In addition, this research might produce a bottom-up process of implementation of the studio policy. While most studio policies are written from the faculty's perspective and refined from the students' perspective, this reverse in the process might provide a different take on the process in favor of a more effectively used studio policy by students.

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**APPENDICES**

## Appendix A: The final draft of the SAQ used to collect data.

## Questionnaire

**Background[42]**

My name is Abdallah Daoud. I am currently doing an investigation, as part of my MSc thesis in architecture at Eastern Mediterranean University (EMU), on developing an understanding of design studio culture and more specifically design studio culture in the architectural program in EMU.

I would be thankful if you can fill this quick questionnaire and share your learning experiences in the design studios. I can assure you that your answers will remain anonymous and will be used only for academic research.

---

- **Your design studio level:**

  ☐ Architectural Design Studio - I (ARCH291)

  ☐ Architectural Design Studio - II (ARCH292)

  ☐ Architectural Design Studio - III (ARCH391)

  ☐ Architectural Design Studio - IV (ARCH392)

  ☐ Architectural Design Studio - V (ARCH491)

  ☐ Architecture Graduation Project (ARCH492)

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A. **Based on your learning experience, do you agree that the architectural program in EMU, allows you to…[43]**

- grow time management skills and approaches?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- develop your verbal communication and the way to talk with others?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- develop your thinking abilities to analyze problems and propose solutions to these problematic situations?

---

[42]. For any more information, documents or questions about the research please contact Abdullah Daoud e-mail: abdullahdawoud1@gmail.com   Tel: 05428809810

[43]. Before answering, please refer to the consent form, for signature and approval, attached to this questionnaire.

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- relate the design tasks, proposed in the studio, to the extracurricular activities proposed or provided by the program?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

## B. Based on your experience in the studio, do you agree that...

- interacting with other students is an important part of the learning experience of the studio?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- the academic events of the studio (desk reviews, discussions, or juries) strengthen your academic relationship with your instructor/s?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- you look up to your instructor/s as a role model/s or as a good example in the way to approach the design task proposed?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- your interactions with the teaching assistants are less stressful and easier in the design studio?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- your interaction with other senior students, or teaching assistants, might be helpful in the development of your design projects?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- the discussions in the reviews, juries…etc. address social issues that exist in the local community of Cyprus?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- the discussions in the reviews, juries…etc. address social international issues in other parts of the world?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- the approaches to the proposed design problems are taking environmental issues and concerns into consideration?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- the approaches to the proposed design problems allow you to develop your creative skills and abilities to analyze problems and situations and provide design solutions?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

- public speaking in juries, reviews…etc. may increase your confidence in presenting yourself and expressing your ideas?

| Strongly disagree | | | | Strongly agree |
|---|---|---|---|---|
| ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

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- Do you think that the desk layout and arrangement in the studio should be changed?

  ☐Yes        ☐No

  If yes, what might be, from your point of view, a more suitable arrangement and layout of desks at your studio level?

- What kind of furniture, equipment, or interior fixations should be further enhanced or additionally provided to enhance the physical space of the studio?
  1.
  2.
  3.

- In the architectural program in EMU, choose which extracurricular activities (workshops, training…etc.) you think should be added to the program? (Note: You can choose more than one option)
  ☐ Architectural tutoring and teaching
  ☐ Mental health awareness
  ☐ Entrepreneurship and management
  ☐ Debates

☐ Technological representation tools (3D Max, Sketchup, Photoshop…etc.)
☐ Other, please specify

Thank you for participating!

## Appendix B: Consent form of participation in the study

### Consent form

Research title: **Understanding design studio culture – an implementation of studio policy in the Department of architecture at EMU**

**Name of Researcher: Abdallah Daoud Abualflayeh**
Email: Abdullahdawoud1@gmail.com
Phone: 00905428809810

Dear participant…
Please take a few minutes to read the following information on this research carefully before you agree to participate. If at any time you have a question regarding the study, please feel free to ask the researcher who will provide more information.

This study is being conducted by **Abdallah Daoud** under the supervision of **Prof. Dr. Özgür Dinçyürek**; the research aims to provide an understanding of the design studio culture and its considerations and parameters that govern the social habits, traditions, and values of the architectural education. In addition, it aims to explore the possibility of addressing studio culture and cultural awareness in written and explicit studio policy through the investigation of the considerations and factors of studio culture in the department of architecture in EMU.

You are not obliged to participate in this research and are free to refuse to participate; you may also withdraw from the study at any point without giving any reason. In this case, all of your responses will be destroyed and omitted from the research. If you agree to participate in and complete the study, your name and identifying information will not be disclosed except for data analysis and scientific research. Once the data is analyzed, a report of the findings may be submitted for publication.

**To signify your voluntary participation, please complete the consent form below.**

- I voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that in any report on the results of this research, my identity will not be declared.
- I understand that I am entitled to access the information I have provided at any time.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.


Signature of **Participant:**                                    Date:




Signature of **Researcher:**                                    Date:

# Appendix C: Approval of the Research and Publication Ethics Board in EMU



**Doğu Akdeniz Üniversitesi**
"*Erdem, Bilgi, Gelişim*"

**Eastern Mediterranean University**
"*Virtue, Knowledge, Advancement*"

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Bilimsel Araştırma ve Yayın Etiği Kurulu (BAYEK) / Board of Scientific Research and Publication Ethics
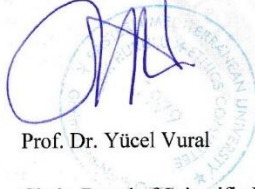
**Reference No:** ETK00-2021-0037                                21.09.2021

**Subject:** Your application for ethical approval.

**Re:** Abdallah Abualflayeh and Prof. Dr. Özgür Dinçyürek
Faculty of Architecture.

EMU's Scientific Research and Publication Ethics Board (BAYEK) has approved the decision of the Ethics Board of Psychology (date: 20.09.2021, issue: 21/14) granting Abdallah Abualflayeh and Prof. Dr. Özgür Dinçyürek from the Faculty of Architecture to pursue their work titled **"Understanding design studio culture – an implementation of studio policy in the Department of Architecture at EMU"**.

Best Regards

Prof. Dr. Yücel Vural

Chair, Board of Scientific Research and Publication Ethics - EMU

YV/ek.